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HAROLD S. BUTTENHEIM
Editor

ALDEN W. WELCH
Secretary and Research Editor

LT. (j.g.) WILLIAM S. FOSTER
Engineering Editor
(On leave of absence for naval duty)

ANNE HOLLIDAY WEBB
Associate Editor

EDGAR J. BUTTENHEIM
President

HERBERT K. SAXE, Treasurer
PRENTICE C. FORD, Ass't to President
Maj. MYRON MacLEOD, Advertising Mgr.
(On leave of absence for military duty)

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BRANCH OFFICES
Daily News Building, Chicago 6
GEORGE S. CONOVER, Vice-President

Mills Building, San Francisco 4
Pershing Square Building, Los Angeles 13
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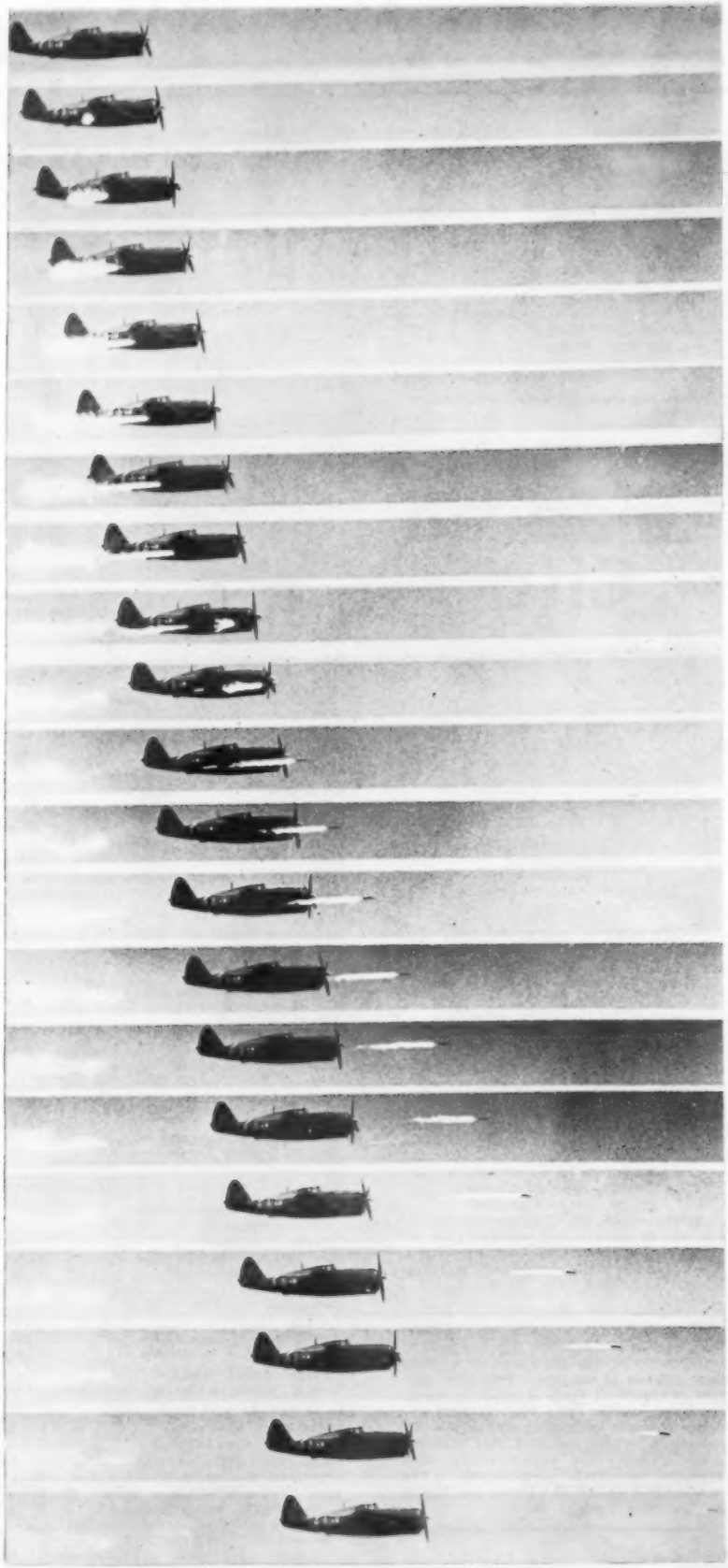

Succession pictures taken by a "ribbon frame" camera, showing a wing rocket getting under way and speeding toward the enemy at about 13 miles a minute. This camera was developed by Bell Telephone Laboratories.

Photographing a ROCKET at 800 miles an hour

ONE outstanding weapon of this war is the rocket, now used by our fighting forces on land and sea and in the air.

Scientists at Bell Telephone Laboratories had an important part in the technical development of this American weapon. One of their contributions was the "ribbon frame" camera which takes 120 pictures a second on a continuously moving film. It has proved of great value in studying rockets and shells in flight.

The ribbon frame camera is only one of many Bell Laboratories developments which are being turned against the enemy.

Our Laboratories are now wholly devoted to the war. When it is won, they will go back to their regular job—helping the Bell System give you the best telephone service in the world.

BELL TELEPHONE SYSTEM

How Finance Urban Redevelopment?

Milwaukee Studies a Complex Problem

"IF private enterprise in the reconstruction of blighted areas is subsidized, as it must be, what controls and limitations shall be imposed by law upon redevelopment corporations sponsoring housing projects in blighted areas?"

This was one of six questions recently addressed by Walter J. Mattison, City Attorney of Milwaukee, Wis., at the suggestion of the Milwaukee Common Council Joint Committee on Judiciary Legislation and Public Buildings and Grounds, to various organizations interested in problems of housing and blight elimination in that city.

Answers from 12 organizations have been reproduced in a 40-page pamphlet by the Committee on Housing of the Milwaukee Junior Chamber of Commerce, one of the chief sponsors of this study, entitled "Milwaukee Speaks on Housing and Blight Elimination." In this cross section of public opinion—mainly representative of the business interests of the city—the following organizations are included:

1. Milwaukee Real Estate Board
2. Affiliated Taxpayers Committee
3. Building Owners and Managers Association
4. Savings and Loan Council of Milwaukee County
5. The Citizens Committee on Housing
6. The Property Owners Bureau
7. Frank Kirkpatrick, Inc.
8. Joint Action Committee for Better Housing
9. Milwaukee Metropolitan Plan Association
10. The Milwaukee Advertising Club
11. Milwaukee Junior Chamber of Commerce
12. National Association of Home Builders (Milwaukee Chapter)

Opinions Vary Widely

An analysis of these letters indicates agreement by 10 of the 12 organizations that Milwaukee cannot get rid of its slums and blighted areas and provide decent housing for families of low income without some form of subsidy. With one exception, all of the organizations were opposed to the creation of large-scale "public housing" projects and were of the opinion that private enterprise could do the job.

The organizations numbered 1 and 2 favor subsidies to individual families and not to the physical establishment of housing. Organizations Nos. 3 and 6 seem to be opposed to subsidy in any form. Nos. 4, 7, and 11 favor temporary tax relief to stimulate redevelopment for low-rent housing. No. 5 would authorize the city to acquire by eminent domain areas to be redeveloped, the sites "then to be sold to developers at a price which will support new housing."

Answer No. 8 is from an organization which favors public housing to the extent that private enterprise cannot do the job. Nos. 9 and 10 do not answer the above-quoted question directly. No. 12 expressed the opinions that "neither men on government payrolls nor citizens in productive enterprise can redevelop blighted areas or rent modern dwellings to families of very low income, unless redevelopment and/or the families are aided by the taxpayers' contributions," and urges that the Common Council "instruct the proper official of the City to prepare to purchase or condemn such blighted properties as are needed for redevelopment in the area designated and to sell cleared land for housing redevelopment at its economic housing value."

The question of adequate public controls as a *quid pro quo* of public aid to urban redevelopment is largely ignored by the 12 organizations in their replies to the City Attorney's letter. Research Director Earl A. Tetting of Buildings Development Co., and chairman of the Housing Committee of the Milwaukee Junior Chamber of Commerce, in a letter to THE AMERICAN CITY has this comment to make:

"The history of the subject discloses that reconstruction of blighted areas has not until recent years been possible because of the lack of power of condemnation or the right of eminent domain by private enterprise. Society has, wisely or otherwise, delayed making such a right available, until now the vast vested interests that also represent the heart of our cities' tax structure are in danger of being destroyed, unless blighted areas are acquired for a sum equal to their present assessment for taxation purposes. . . .

"Subsidy of private enterprise should take the following course: (1) make the prohibitively high land acquisition cost a lesser burden through a long-term loan at less interest; (2) give private enterprise projects tax abatement for a term of years long enough to make up for the handicap of the difference between what the lower interest cost would save and the still excessive cost that is left; and (3) make any controls or limitations on private enterprise only in such a way as to prevent exploitation by the new owner of the finished product and still not be so rigid as to prevent the proper elements being intrigued into doing the job."

Rhode Island Enacts Subdivision Control Law

THE state of Rhode Island took an important forward step in the enactment of progressive legislation by the adoption last month of an "Act Authorizing the Cities and Towns to Control the Subdivision of Land."

In the campaign for this legislation, which has extended over a period of several years, prime movers were several of the smaller cities and towns in the metropolitan area, notably Cranston and Warwick. These two predominantly residential communities have been receiving the population overflow of Providence, and have been heavily penalized by speculative land developers who, unhampered by proper restrictions, have found their undeveloped land areas a made-to-order paradise.

The depression years aggravated the problem, especially as far as Warwick was concerned. This city, with an extensive scenic shoreline on the west coast of Narragansett Bay, possessed many colonies of summer homes. Owners feeling the economic pinch hastily converted them into year-round dwellings for economical living. Thus potential slums developed.

Further complications ensued with the advent of war. The tremendous development of war industry in the Providence area, and establishment of the huge Quonset Naval Air Base some miles further down the bay, brought an influx of out-of-town workers with their families who were accommodated in communities of low-cost homes built by private contractors with FHA backing.

Close cooperation between the Planning Boards of Cranston and Warwick formed the nucleus of the remedial action. After a period of informal discussion the Cranston Board arranged a joint meeting of Planning Board representatives of Providence, East Providence, Cranston, and Warwick. This meeting voted to draw up a subdivision control bill for presentation to the State Legislature. The drafting of the bill was entrusted to Edward Winsor, Providence attorney and city planner. Support of the legislative representatives of the communities was enlisted, and an active campaign of publicity and education undertaken. *The Providence Journal* was most cooperative in providing publicity; and speedy endorsement was forthcoming from banks, real estate, insurance, and title companies.

Following the usual pattern of subdivision control acts, the act provides that cities and towns authorize their Planning Boards to enact rules and regulations governing and restricting platting of land; requires that all developers submit plats to the planning boards for approval; that public hearings to be held on the acceptance of each plat; and provides for appeal through the Zoning Board of Review to the courts by any developer.

HEDLEY SMITH
Secretary
Warwick City Planning Board

do you have this valuable 80-page manual?

Sanitation HTH is available in cases of nine 5-lb. cans and in 100-lb. drums.

"Hypo-Chlorination of Water" is a complete reference manual on the use of high-test calcium hypochlorite in the modern practice of safeguarding water supplies. Written in simple, non-technical language, it covers all phases of standard sanitation practice including instructions for emergency use; tables and charts showing quantities of Sanitation HTH required for many specific needs; algae and alkalinity control. Fully illustrated. Many schools have requested copies for student use in courses in water treatment.

Though more than 25,000 copies—in five editions—have been distributed to those interested in modern water and sewage treatment, Mathieson again offers the latest edition, free of charge, to newcomers in the profession and to those whose copies have "disappeared". Send us a postal card—we'll mail your copy.

P. S. Checked your stocks of Sanitation HTH recently? Remember—in an emergency you'll be glad to have an ample supply on hand.

Mathieson
CHEMICALS

THE MATHIESON ALKALI WORKS (INC.)
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Sanitation HTH... Liquid Chlorine... PH-Plus... Fused Alkali... Caustic Soda... Soda Ash... Bicarbonate of Soda... Chlorine Dioxide Ammonia, Anhydrous & Aqua... Dry Ice... Carbonic Gas... Synthetic Salt Cake... Sodium Chlorite Products... Sodium Methylate

Our Municipal Notebook

Protection of Museum

THE protection of works of art, museum objects, and similar valuables against fire presents highly specialized problems, differing in considerable degree from the problems of protection of records. Because objects of this character are generally on exhibition, and hence cannot be protected by measures that limit their accessibility, protection is to be obtained principally by housing the material in fireproof buildings and enforcing rigid fire precautions. The National gallery of Art, Washington, D. C., might be consulted on such procedures.

In general, the same methods for the safeguarding of records can be applied to the protection of valuables. Precautions must be observed to prevent damage from heat, or heat and moisture combined, at temperatures considerably lower than those causing written or printed records to become illegible, in case of articles such as watches, optical goods, gems, paintings, stamps with adhesive facings, and articles made of celluloid. Storage within vaults having a considerable margin of fire resistance above that required for the location is preferable.

Civic Organization and Leadership

CONVINCED that urban democracy will never function well without effective civic organizations, civic conferences, and professionally trained coordinating leadership, the National Bureau of Civic Research has been issuing a series of monographs dealing with various aspects of these problems. The fifth of these studies by Russell H. Ewing, the Bureau's Executive Director, has just appeared under the title "Civic Conference Leadership: Institutes for Training Civic Leaders."

A major proposal of the National Bureau of Civic Research is that colleges and universities develop civic research projects and organize new courses in the field of civic organization and leadership training. Submission of this proposal by Mr. Ewing at the February 1945 meeting of the Executive Council of the American Political Science Association resulted in a resolution directing the Association's Committee on Citizen Education to study and report on the project.

Titles of the four earlier monographs in the series by the National Bureau of Civic Research (510 South Spring Street, Los Angeles, Calif.) are: Principles of Civic Organization (35c); Principles of Civic Leadership: The Characteristics of Civic Leaders (50c); Can the Colleges Train Civic Leaders? (25c); and The Implementation of Municipal Research Through Civic Organization (25c).

The above-mentioned fifth monograph in the series, "Civic Conference Leadership," is priced at $1. It contains in addition to a 21-page discussion of its subject an annotated and classified bibliography of 316 books, pamphlets and magazine articles on leaders and leadership.

Then and Now

Once upon a time THE AMERICAN CITY *received an unsolicited article from a Chamber of Commerce secretary extolling the wonders and virtues of his community and quoting, among other figures, certain vital statistics. The alleged mortality rate was so remarkably low for a southern city with a large Negro population that the editor wrote the author for an explanation. The reply blandly stated that "of course the figures given were for the white population only"—although there had been no intimation of that fact in the article as submitted.*

This incident is cited as an example of a type of "city boosting" that THE AMERICAN CITY *finds to be much less common today that it was two or three decades ago. Indications of the more enlightened service which chambers of commerce are rendering to their communities are to be found in the short articles from two Ohio cities and two Indiana cities on pages 79-80 of this issue.*

2,451 *Kwhrs. per Year for Chattanooga Families*

THE statement of financial operations in 1944 of the Electric Power Board of Chattanooga, Tenn., recently submitted to the Mayor and Board of Commissioners, closes with:

"As of December 31, 1944, the Board was serving 46,925 customers and in 1944 had sales totaling 528,316,000 kwhrs. For this the Board received an average income of 9/10 cent per kwhr. Use of electricity for residence puposes averaged 2,451 kwhr in 1944—among the highest in the United States in cities of comparable size and over twice the national average. The TVA rates, without surcharge, continue to be charged by the Board for electricity."

Since the purchase of the distribution system in 1939, the Board has extended service to over 9,000 additional customers and there are still thousands of unserved homes in the Board's service area. Many customers have added new uses of electricity until the electric load has doubled. To take care of the needs for new service as soon as materials and labor are available for extensions, a fund of $600,000 has been accumulated. Another fund amounting to $574,704 has been built up to pay for renewals and replacements of lines, poles and substations as they become obsolete or unreliable.

Storm, cyclones and tornado insurance is prohibitive in cost for an electric distribution system, yet a single storm of a few minutes duration can, and has, cost damage to electric distribution systems involving large sums. To avoid issuing bonds or raising rates in the event of a damaging storm, an insurance reserve fund has been created to accumulate at the rate of $1,500 per month, and $81,000 was in this fund at the close of 1944.

Based on average rates of the private utility in 1938, customers of the Board in its 5½ years of operation have saved $14,876,375 in their cost of service.

Noise Abatement Awards

EACH year for the past three years, the National Noise Abatement Council has named four United States cities selected on a population basis as winners of its annual Achievement Awards for outstanding civic accomplishment in the abatement of needless noise on the streets and in factory, office, and home.

In 1945 the Council will also make a *Grand National Award*, to be given to that city whose achievements in noise abatement are adjudged most outstanding. The period judged includes May 7, 1944, to May 5, 1945. Material submitted as supporting evidence to claims for the awards must be received not later than July 1, 1945.

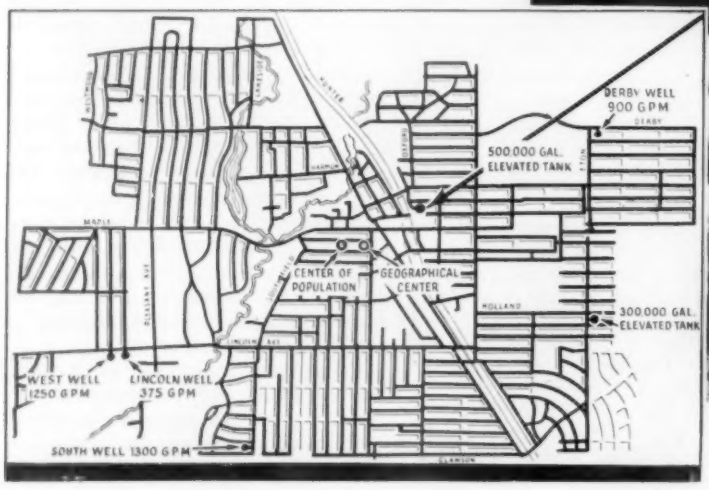
For further details apply to: Committee on Awards, National Noise Abatement Council, 9 Rockefeller Plaza, New York 20, N. Y.

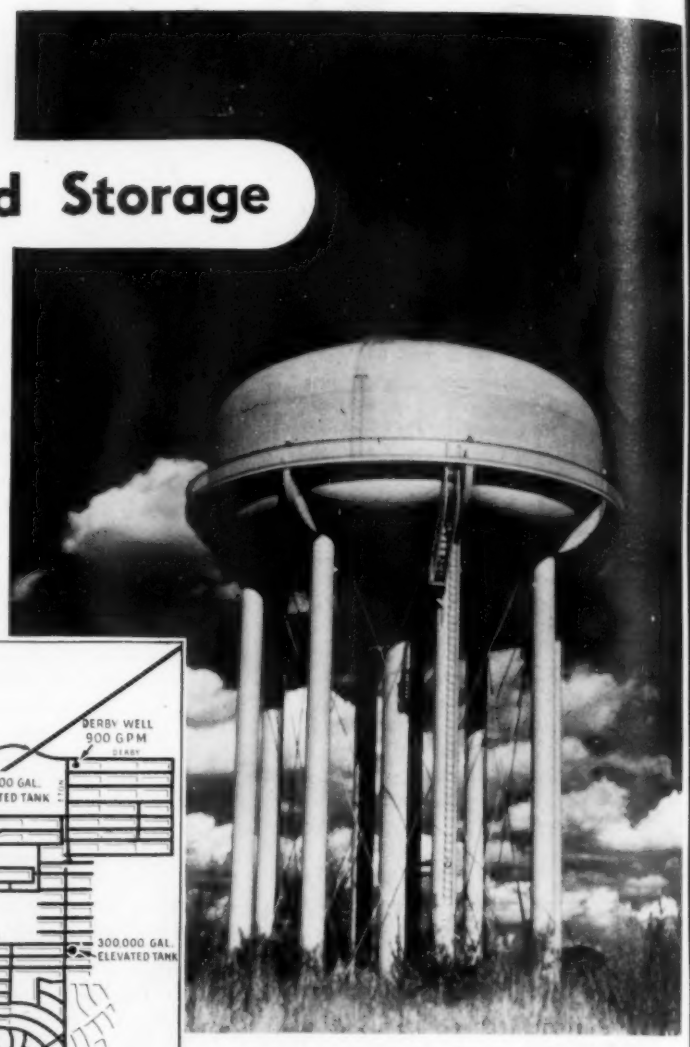
HORTON Elevated Storage

Minimizes Water Pressure Variations

for

Birmingham, Michigan





500,000-gal. Horton elevated tank in the water works system at Birmingham, Michigan. It is a radial-cone design with tubular columns, 66 ft., 3 in. to bottom.

Wide fluctuations in water pressure disappeared when the city of Birmingham, Michigan, installed a second Horton elevated storage tank in its water works system. Now the 3,150 Birmingham commercial and industrial users of water . . . consuming an average of 1,500,000 gals. daily . . . are assured uniform pressure . . . and adequate fire protection.

Four wells furnish water for Birmingham's distribution system, which is made up of approximately 90 mi. of 4 in. to 16 in. mains. As may be seen from the map shown above, the Horton radial-cone bottom elevated tank is the key to Birmingham's efficient water distribution system . . . supplementing a 300,000-gal. ellipsodial-bottom tank installed in 1926.

Pumping pressures at the wells are: Derby street—45 lbs.; South—60 lbs.; West—67 lbs.; Lincoln—67 lbs. The average pressure in the distribution system is 42 lbs. per sq. in.

Daily, municipalities write our offices for the Horton solution to the problems of water pressure fluctuations, and the need for a ready, reserve supply of water for fire protection. We will be happy to work with you on your water supply system problems, too. Just write to any of our offices shown below.

CHICAGO BRIDGE & IRON COMPANY

Birmingham 1.....1502 North Fiftieth Street
Houston 1.....5601 Clinton Drive
Tulsa 3.....1625 Hunt Bldg.
New York 6.....3308—165 Broadway Bldg.
Cleveland 15.....2236 Guildhall Bldg.

Chicago 4.....2127 McCormick Bldg.
San Francisco 5.....1033 Rialto Bldg.
Philadelphia 3...1616-1700 Walnut St. Bldg.
Los Angeles 14.....1403 Wm. Fox Bldg.
Washington 4.....703 Atlantic Bldg.

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

Water Supply and Treatment

"Blue-Print Now" Features Long-Range Planning

THE Committee on Water and Sewage Works Development, Suite 2110, 500 Fifth Ave., New York 18, N. Y., has just released its fourth leaflet devoted to the progress made by municipalities in planning post-war water and sewerage works. The outstanding feature of this report is the emphasis placed by municipalities on long-range planning. Two of the group—Dallas, Texas, and Detroit, Mich.—have carried their planning to the point of integrating all projected post-war public works into a master plan, while several other cities are looking far into the future in planning water and sewerage facilities. Those listed in the leaflet this month are as follows:

Coffeyville, Kan., has completed plans for water treatment and supply facilities to cost $611,214.

Douglasville, Ga., is ready with plans for a new water filtration plant which will cost approximately $60,000.

Pierre, S. D., has plans partially completed for additions to its water works which will total approximately $68,000.

Washington Mills, N. Y., has plans for its water works totaling approximately $40,000.

Boulder, Colo., Dallas, Texas, Detroit, Mich., and Kennett, Mo., all have plans for both water and sewerage projects complete and ready to go. Palo Alto, Calif., and Asheboro, N. C., also have plans under way for both water and sewerage projects.

Tacoma, Wash., has extensive post-war plans, the largest item of which is a sewerage system to cost $3,000,000.

G. I. Water Consumption in Battle and at Base

THE average GI requires a supply of water of one gallon per capita per doy during battle and 15 gpd at semi-permanent shore base. This was disclosed by W. H. Smith, Captain, CEC, U.S.N., in a paper delivered at the annual meeting of the American Society of Civil Engineers held early this year in New York. In his paper he contrasted battle front demand with the average municipal requirement of 100 gpm.

"The accepted way of taking a bath in the forward areas," said Captain Smith, "follows the system aptly described as 'wet down, soap up, and wash off." It is surprising how many men can get a bath in this way on a limited supply of water. In my opinion it far surpasses the British method of limiting the bath to 5 inches of water in the typb, both in conservation and in the matter of getting clean."

The New York Section of the American Water Works Association is holding four sectional meetings to conform to the ruling of the Office of Defense Transportation relative to conventions. These will be strategically located meetings of one day's duration each. See page 141 of this issue.

Pontiac, Ill., Uses Break-Point Chlorination

NO single phase of water treatment has received more attention or created more discussion than that of sterilization, and rightly so, since in the last analysis it is the most important part of the treatment process. It was this desire for more efficient sterilization that caused us to take up the study of break-point chlorination.

After much laboratory work we adopted this type of treatment on December 1, 1943, and since then have continued its use with much success. Our source of supply is a small inland stream that drains a large area of farm land, so the condition of the water undergoes wide variations both physical and chemical. Our treating process provides coagulation, sedimentation and filtration. Formerly we used pre- and post-chlorination with ammonia, employing alum as a coagulant and carbon to control tastes and odors. We have used chlorination since 1910 and the chlorine ammonia process with pre- and post-chlorination since 1935.

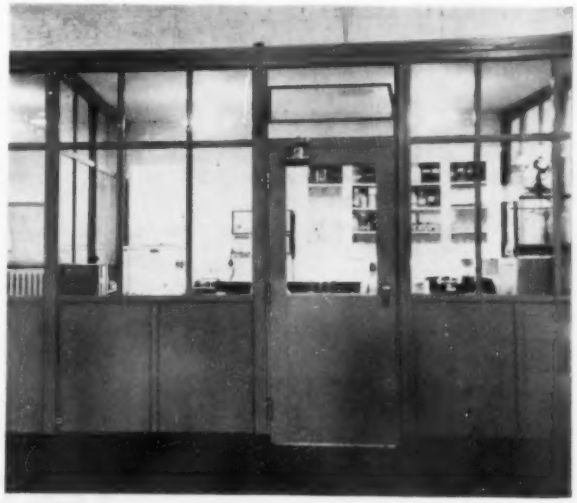
We were producing a finished water that met the Treasury Department Standards. Although our water was good, we felt that break-point was an improvement which greatly increased the factor of safety from a sanitary standpoint. Since adopting break-point the use of carbon has been unnecessary in spite of the presence of heavy algoe growths in the raw water. Nor have we been using ammonia. Chlorine is now applied to the raw water entering the plant to give a free chlorine residual of 1 ppm in the plant effluent. By free chlorine residual, I mean the flash obtained by using the standard method ortho-tolidine test.

With this process we find that the residuals are not nearly as uniform as those we obtained with the chlorine-ammonia treatment, but the variations cause no difficulties and are easily kept within reasonable limits by raising or lowering the feed as the case may require. Our residuals are as high as 3 ppm in the plant effluent but we have no tastes or odors of any kind.

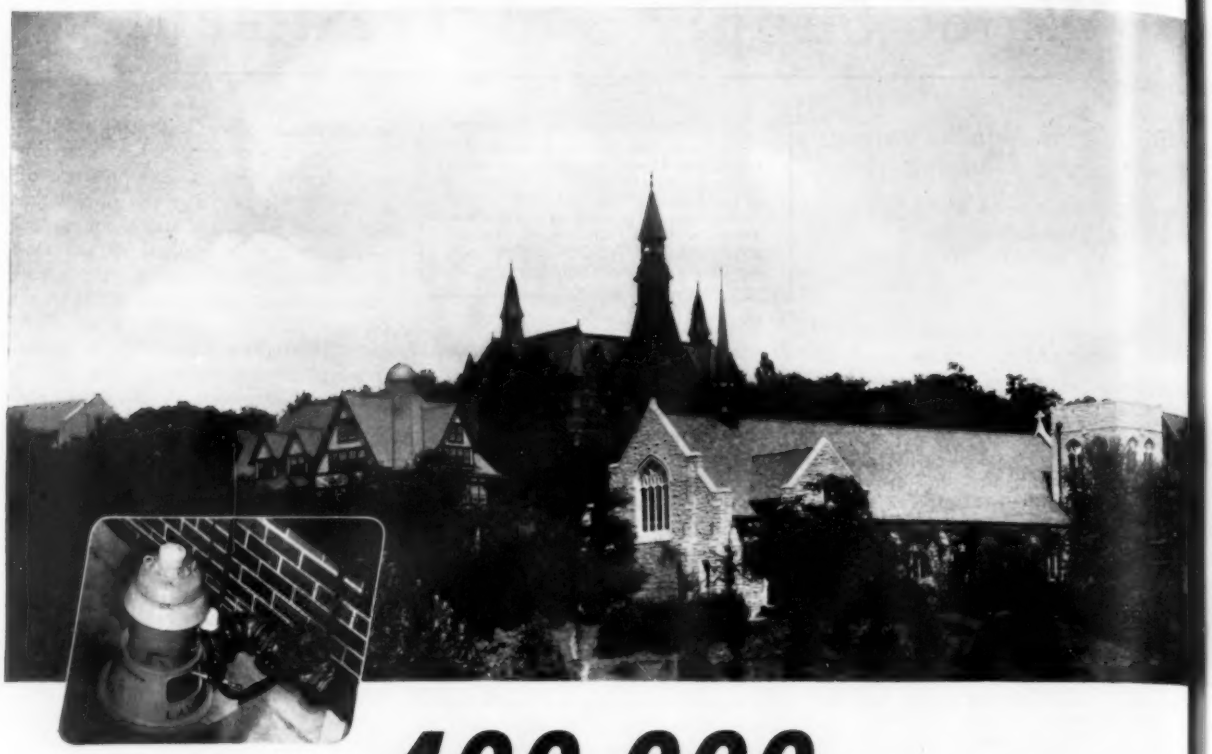
Prior to break-point chlorination, our bacterial results were good, plate counts were low, and no coli were found in the finished water but we did have a large number of non-confirming gas formers. When break-point was first tried we still were troubled by some gas formers. Then we raised the chlorine feed to obtain a plant effluent of 1 ppm and the trouble disappeared. We have had no sign of gas formers in any of the samples of the filter effluent, the plant effluent, or the distribution system since May 1943.

Our success with break-point chlorination has in a large measure been due to the efforts of my assistant, H. J. Wagner.

JAMES P. MURPHY
Manager, Illinois Water Service Co.
Pontiac, Ill.



Pontiac's Water Works laboratory where tests are made to provide the basis for accurate control of the break-point process.



400,000 GALLONS OF WATER DAILY
For Park College and City

For more than forty years Park College struggled to serve itself and the City of Parkville, Missouri, with water. The water system was inadequate and inefficient to operate. For many years it imposed a heavy financial loss on the college. Furthermore, seldom was an ample supply of water available. Frequently it was necessary to haul water from another city ten miles away.

And then in 1941 the situation became even more critical. Both resident and college use had to be cut to the absolute minimum. By vote, the citizens approved an ordinance granting Layne-Western Company a franchise for taking over and operating the water system. Two new Layne Well Units consisting of Layne Gravel Wells and vertical turbine pumps, capable of producing 400,000 gallons of water daily, were immediately installed. A modern iron removal and water treating plant was rushed to completion.

Today, Park College and the City of Parkville have a thoroughly modern and highly efficient water system with a capacity far greater than their needs. The water is clearer and finer than ever enjoyed before . . . and all at a tremendous annual saving to the College.

For late catalogs, illustrated bulletins and further facts about Layne Water Systems, Layne Turbine Pumps and Layne Services, address Layne & Bowler, Inc., General Offices, Memphis 8, Tenn.

LAYNE PUMPS

Layne Vertical Turbine Pumps are obtainable in capacities from 40 to 16,000 gallons per minute. They are sturdily built of fine quality materials throughout and give years of faithful service. Their efficiency saves many dollars annually on power cost. Write for fully illustrated Pump Catalog.

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LAYNE

WELL WATER SYSTEMS
VERTICAL TURBINE PUMPS

Sewerage and Sewage Treatment

Relations Between Loading and Supernatant Liquor in Digestion Tanks

ACCORDING to Dr. Willem Rudolfs, Chief of the Department of Water and Sewage Research, New Jersey Agricultural Experiment Station, in a paper delivered at a recent New York State Sewage Works Association meeting, the volumes of supernatant which could be obtained from fresh stored solids, ripe sludge, and digestion mixtures were determined from laboratory experiments. The quantities of supernatant liquor produced from raw sludge, single- and two-stage digestion were also determined from plant-operation records. From this data the following conclusions were drawn:

1. Supernatant liquor production is affected by the initial concentration of raw sludge, the time of storage, and the temperature of the sludge.

2. Supernatant liquor production is directly related to the quantities of fresh solids added to the digester; in other words, supernatant liquor production is a function of the loading of the digesters. Production of 50 percent supernatant liquor may be considered optimum.

3. Optimum loading of two-stage digesters appears to be about one pound of dry volatile solids per cubic foot for effective primary digestion capacity per day, if the digestion temperature is maintained at 82 to 84 degrees F. The total digestion capacity (primary and secondary) required would be about 2 cubic feet for effective digestion and sludge concentration. When industrial waste is present, producing sludge, the total digestion capacity must be further increased.

4. Two-stage digestion tanks are considered to receive maximum loading when about 40 percent of the fresh solids volume added can be obtained as supernatant liquor.

5. Higher loadings than 1 pound dry volatile solids per day per cubic foot of effective primary digestion capacity result in decreased production of supernatant liquor while lower loadings produce a higher percentage of supernatant liquor.

6. When the loading is approximately twice the allowed maximum, no clear supernatant can be obtained.

7. Average loadings of .056 pound dry solids or about .042 pound volatile solids of effective digestion capacity in single-stage digestion tanks maintained at 66 to 72 degree F. did not produce clear supernatant liquor.

8. The suspended solids in the supernatant liquor increase with loadings higher than the maximum allowable.

9. Operation difficulties increase with greater then maximum loadings.

10. With higher than maximum loadings the final sludge disposal facilities are taxed.

11. Higher than maximum loadings require either increased digestion capacity or greater facilities for final sludge disposal.

By way of explanation, Dr. Rudolfs gave the difference between supernatant and sludge in a digestion tank to be a count of 2,500 or less ppm of solids for supernatant and 3,000 or more ppm for sludge.

Industrial Wastes Often Dangerous

ACCORDING to R. R. Baxter, Superintendent of the Sewage Treatment Plant at Anderson, Ind., in a recent issue of *Sewage Gas*, a publication of the Indiana State Board of Health, industrial wastes are sometimes more dangerous than they appear to be as a recent occurrence at Anderson proved. Here is his story:

As far as appearances were concerned everything was running smoothly at Anderson the last few days of October and the first few days of November. Visual observation and routine analysis showed nothing unusual. However, on November 2 dead fish were discovered in White River. They were first noticed at the Noblesville dam 16 miles from the sewage treatment works. It was obvious that something was wrong. The State Board of Health, the Conservation Department and the Anderson sewage treatment works immediately set to work to determine the cause of the trouble. While investigations were in progress Martin A. Milling of the State Department of Health felt that the root of the trouble might be cyanide in the water, and this was soon confirmed by laboratory analysis.

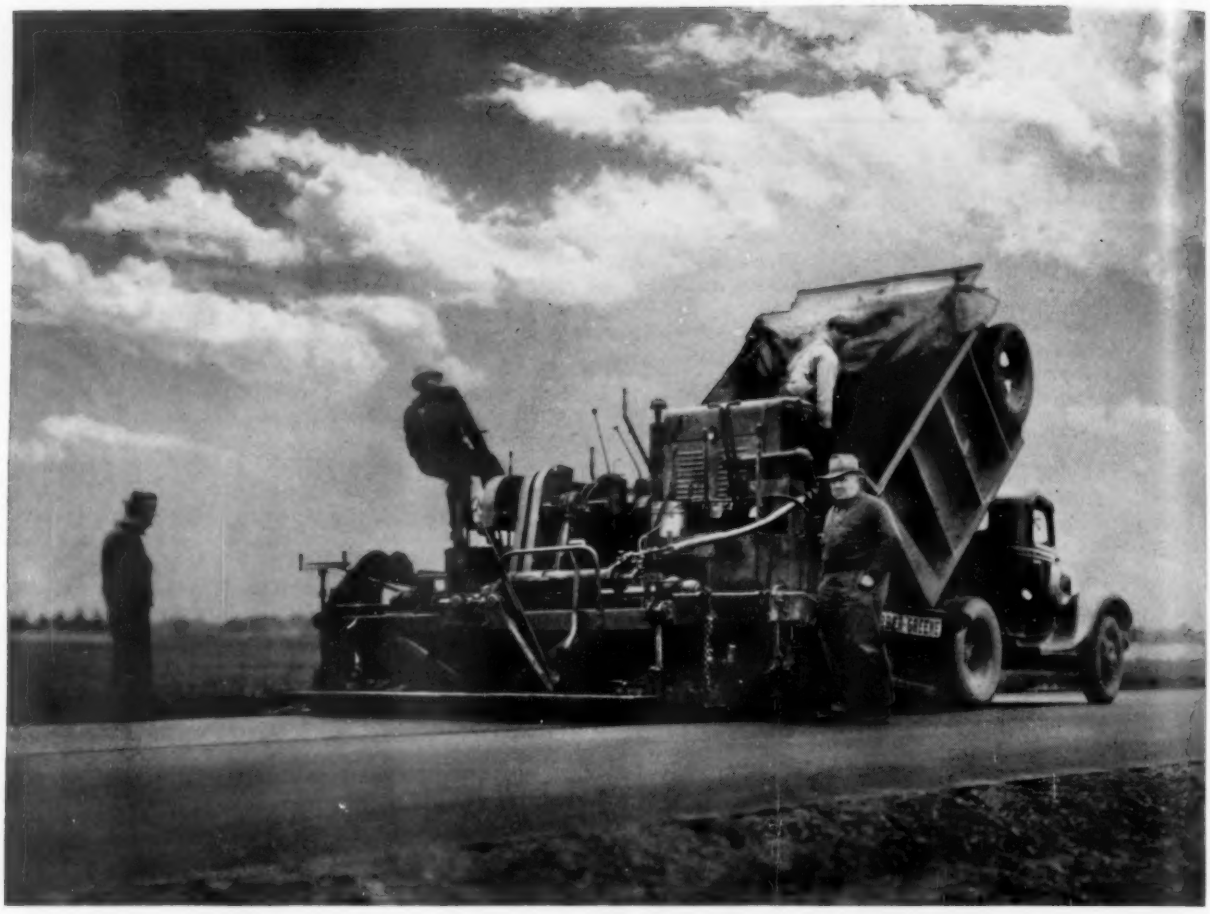
No cyanide was found in the water above the water works plant, which is located approximately 3 miles upstream from the sewage treatment plant, but concentrations of as much as 4 ppm were found some distance below the city of Anderson. The fact that cyanide was found as much as 3 miles above the sewage treatment plant was conclusive proof that cyanide wastes were reaching the river without passing through the treatment works. The greatest amount found in the final effluent of the plant at any time was 2.6 ppm. This concentration was found on October 29 when the raw sewage coming to the plant reached as high as 3.9 ppm.

Investigations were made to determine the cause of this contamination which by November 4 had completely disappeared. A study of the industrial plants in Anderson revealed that large quantities of sodium cyanide were being used in a number of war plants. One plant was able to discontinue its use and the other plants readily agreed to take every precaution in the handling of this material to prevent its entrance into the sewers.

(See also page 98 of this issue)

Bio-Filtration Sewage Treatment Plant at Santa Paula, Calif.

The Santa Paula, Calif., Sewage Treatment Works is a bio-filtration plant. In the foreground is the filter equipped with a Dorr Co. distributor. The modern design of this plant stands out in striking contrast to the rugged mountains surrounding it.



HOW A B G FINISHER MAKES SMOOTHER ROADS

Here's a way to get a well packed surface without springy spots. An asphalt mat laid down with a Barber-Greene Tamping-Leveling Finisher is smooth, *firm*.

In many cases, a 5-ton roller adds only about an eighth of an inch compaction to the material *tamped* by a Barber-Greene. What's more, depressions in the base are not reflected in the finished surface. *The mat is equally packed over every variation in the subgrade.*

Hammering the hot mix 1200 times a minute, the bevelled face of the tamping bar actually compacts the material while striking it off. And to produce a mat of uniform density, the compacted mix is pushed forward and downward simultaneously.

In addition, the creeping travel of the tamper imparts a rolling movement to the loose mix in the spreading chamber. This prevents segregation of the material. And the weight of the follow-up screed — level with the stroking depth of the tamping bar — completes compaction . . . leaves a smooth, table-top surface.

A Barber-Greene *Tamping-Leveling* Finisher will help you build better, smoother, lower-cost roads. Write for B-G Finisher Catalog. Barber-Greene Company, Aurora, Illinois.

The tamping bar on a Barber-Greene Finisher compacts the hot mix while striking it off. Material is pushed forward and downward at the same time to fill all the voids in an uneven subgrade. A mat of equal density throughout is produced.

Barber-Greene B G *Constant Flow Equipment*

Streets and Street Maintenance

How to Analyze an Express Highway

OF vital importance in planning new metropolitan express highways is the preliminary engineering report. This was emphasized by Joseph Barnett, Chief of the Urban Roads Division, United States Public Roads Administration of FWA, in a paper delivered before the American Society of Civil Engineers at its annual meeting held recently in New York.

The first fundamental that the engineer's report should cover, Mr. Barnett stated, is the transportation problem. It should analyze all transportation to and from the area to be served, take into account mass transportation and pedestrian traffic, and furthermore know what happens to that traffic after it reaches the area.

The next step is to design for traffic volumes that the area will eventually develop. This analysis of future volumes must be based on many traffic studies, analysis of origin and destination data and similar evidence.

The report further should show the solution proposed for the traffic problem and describe alternate designs that were tried. This will avoid unnecessary studies later and will answer questions that may arise in the client's mind.

Important also is the consideration that the report should be made understandable to those who find blueprint reading a mystery. Mr. Barnett emphasized the value of perspective delineations and aerial photographs as a means of documenting the report and pointed out their added value in good newspaper publicity.

The report of course should make an estimate of cost, Mr. Barnett stated. This cost should be broken into usable sections, in addition to right-of-way, construction, engineering, and contingencies. The plan should provide for construction in stages so that parts may be built as finances dictate.

Finally, Mr. Barnett stated, there should be an economic justification for the project. This analysis should match annual cost against annual benefit. Cost figures include such items as amortized construction costs, maintenance, and repair, and annual benefits include such important factors as savings in vehicle operation, savings of time, and the reduction of accidents. However, the analysis should not overlook intangible benefits to be received.

Mobiloader Relieves Manpower Shortage

IN 1942 the city of Superior, Wis., had a 1936 RD 4 "Caterpillar" upon which it mounted an Athey Mobiloader. This unit has amply repaid its investment. Whenever it breaks down, city work is at a standstill until it is back on its tracks again.

Superior was founded on red clay with a gravel base. This Athey loader is used to strip the overburden of clay from the underlying gravel and then to load the gravel from the bank into trucks. This bit of machinery is so efficient that we are not able to move trucks under it fast enough to take all the material it can handle. Not only is it efficient but it is versatile as well, for when a truck is unable to get near the face of the pit the loader can walk back with its load and fill the truck on firmer ground. If the truck should get stuck it can place the bucket against the tailgate of the truck and ease it out of the bad spot, and upon returning to the gravel face, can level the roadway by dragging the bucket. Larger ground irregularities can, of course, be cut off with the bucket while traveling forward. This machine is also used to load blacktop from a windrow, where it has been blade mixed, into trucks for transportation to another street where a blacktop mat is being laid.

We had a half-mile of a city street laid with wood blocks over a poor concrete foundation. When this road deteriorated to such an extent that it heaved continuously we decided to remove the blocks and lay a blacktop mat. Austin-Western graders with scarifier attachments ripped up the wood block pavement, whereupon the blocks were rapidly loaded by means of the Mobiloader. A trailer then hauled the Mobiloader to the windrow which had been mixed on another city street and it immediately proceeded to load the truck with blacktop, and the whole job was speedily completed with its aid.

We have also found this unit to be about ten times as fast as manpower in loading ashes from the alleys; however, I do feel that a D4 unit is too large for this purpose and therefore would recommend a D2. Care must be exercised by the operator in allays so that he does not return at night festooned with telephone and light wires, although actually we seldom have any trouble of this nature.

A loader that is able to throw the material over its head saves turning around in order to deliver the load into a truck, saving track wear, road wear and time. This unit can, of course, be used for loading cinders, slag, snow or, in fact, any type of material, and is efficient in digging wide ditches.

There has been an influx of roughly 7,000 workers to the shipyards in Superior and that, with the ore and coal docks, has corralled most of the manpower, and when the loader fails we are in dire straits indeed.

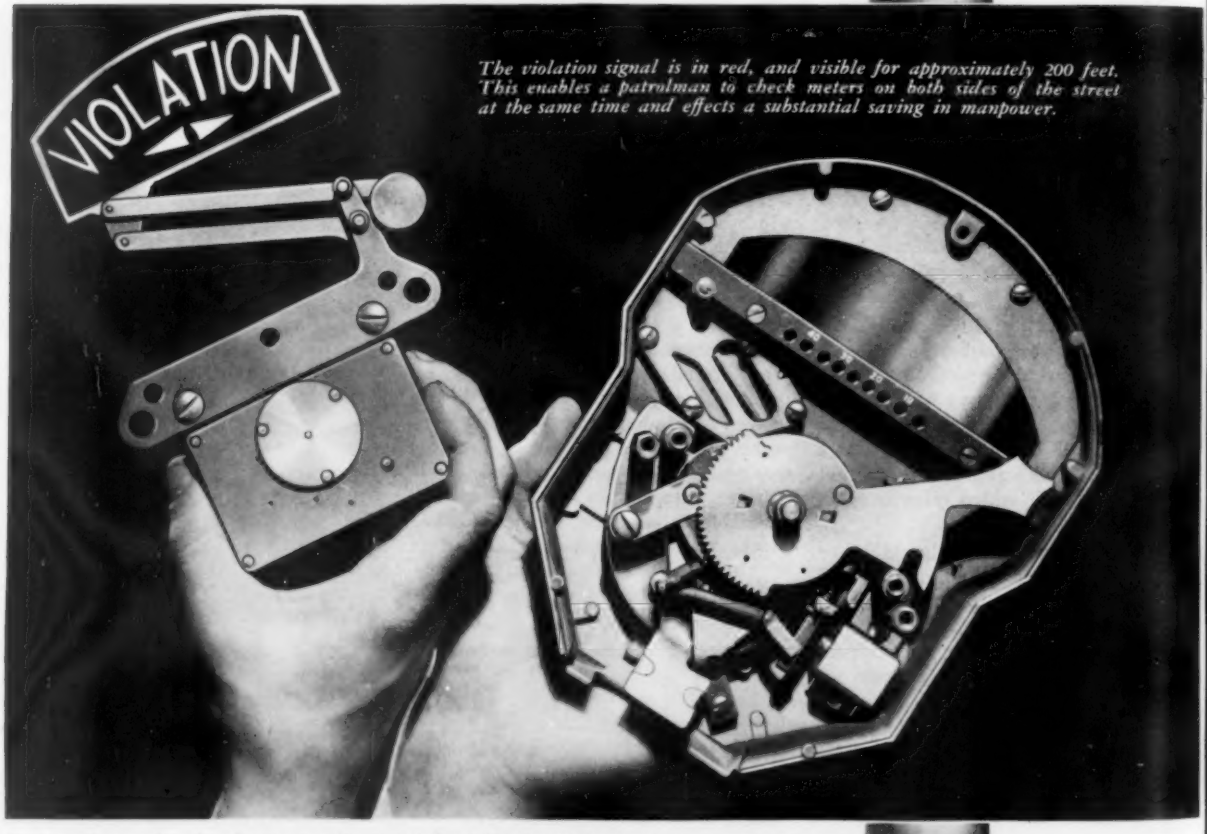
L. B. BARTLETT
Director
Department of Public Works
Superior, Wis.

ABOVE: *The bucket lifted and ready to empty into the chute.*

LEFT: *The Mobilloader picking up a bucket full of material.*

LET'S LOOK *behind the Front*

This is the inside of a MI-CO Parking Meter. The illustration tells better than words the reasons for their unusual service records and low cost upkeep. MI-CO construction is rugged, simple and dependable. There are fewer moving parts to get out of order and cause trouble, and all parts are made of stainless steel and high-grade clock brass, nickel-plated. There's no winding, and you can be sure that MI-CO Meters will give dependable service over long periods of time and under the severest conditions. You'll be interested in all the facts. Write for literature and case histories of many installations. At the present time the manufacture of MI-CO Meters is restricted, but as soon as possible they will again be available for any size installation, from a small village to a large city.



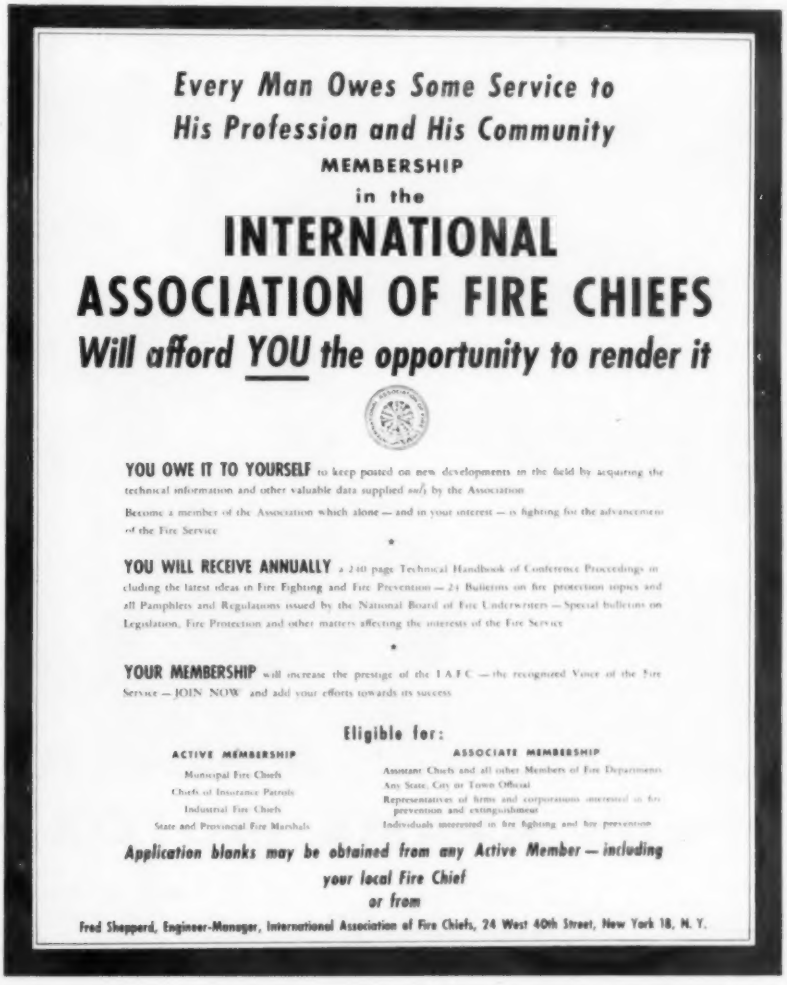
The violation signal is in red, and visible for approximately 200 feet. This enables a patrolman to check meters on both sides of the street at the same time and effects a substantial saving in manpower.

★ *Manufactured under the patents of F. L. Michaels by The Michaels Art Bronze Co., Inc.*

MI-CO METER CORPORATION
231 Court St., Covington, Ky.
Experienced Representatives Wanted

Back the Fire Chiefs

DESPITE the fact that the International Association of Fire Chiefs is nearly 72 years old, it still desires to grow both in numbers and in prestige. A poster used in its current membership drive is reproduced on this page. President of the Association, Samuel J. Pope, Fire Chief of Boston, points out that a large membership makes a greater impression on the public mind and should aid in making taxpayers see the wisdom of having adequate equipment for the fire department. Those eligible for active membership include municipal and industrial fire chiefs, chiefs of insurance patrols, and state and provincial fire marshals. Eligible for associate membership are all other members of fire departments and any state, city or town official as well.


Every Man Owes Some Service to
His Profession and His Community
MEMBERSHIP
in the
INTERNATIONAL
ASSOCIATION OF FIRE CHIEFS
Will afford YOU the opportunity to render it
YOU OWE IT TO YOURSELF to keep posted on new developments in the field by acquiring the technical information and other valuable data supplied only by the Association
Become a member of the Association which alone — and in your interest — is fighting for the advancement of the Fire Service
YOU WILL RECEIVE ANNUALLY a 240 page Technical Handbook of Conference Proceedings including the latest ideas in Fire Fighting and Fire Prevention — 24 Bulletins on fire protection topics and all Pamphlets and Regulations issued by the National Board of Fire Underwriters — Special bulletins on Legislation, Fire Protection and other matters affecting the interests of the Fire Service
YOUR MEMBERSHIP will increase the prestige of the I.A.F.C. — the recognized Voice of the Fire Service — JOIN NOW and add your efforts towards its success
Eligible for:
ACTIVE MEMBERSHIP
Municipal Fire Chiefs
Chiefs of Insurance Patrols
Industrial Fire Chiefs
State and Provincial Fire Marshals
ASSOCIATE MEMBERSHIP
Assistant Chiefs and all other Members of Fire Departments
Any State, City or Town Official
Representatives of firms and corporations interested in fire prevention and extinguishment
Individuals interested in fire fighting and fire prevention
Application blanks may be obtained from any Active Member — including your local Fire Chief or from
Fred Shepperd, Engineer-Manager, International Association of Fire Chiefs, 24 West 40th Street, New York 18, N. Y.

Police Survey Conducted in Cleveland, Ohio

A RECENT police survey conducted by the Cleveland Bureau of Government Research presents the following conclusions and recommendations:

The Cleveland police force is an honest, efficient and well officered body of public employees, but apparently lacking, at times, the morale and esprit de corps so essential to the complete success of so numerous and important a branch of public service. This condition is traceable to four causes: (1) lack of adequate training of new recruits, and the lack of continuous in-service training of officers and men in police ethics and public relations, (2) interference by the Director of Public Safety in administrative functions which properly belong to the Chief of Police, (3) the non-aggressive attitude of the Chief of Police, (4) the activities of the Fraternal Order of Police, which should be abolished.

It further recommended the expansion of police districts, and the erection of new precinct buildings which in the long run will be less costly than maintaining the old buildings now in use. It emphasized the need to reassign men and officers to posts and positions to which they are most adept; to revise the pension system; to increase the use of patrol cars and partially eliminate foot and mounted patrols; to make a better distribution of motorcycle patrol; to redistribute traffic posts, lights and signals, using a minimum number but placing them at essential safety spots; to install new signals where necessary, and to adopt new legislative and civil service rules and laws for more efficient recruiting methods.

A new spirit of professional interest and public service should be instilled into the police force by the police authorities, concluded this survey of the Cleveland Bureau of Government Research.

"Traffic Jam Ahead"

ABOVE is the theme and warning of the National Committee for Post-War Traffic Safety. Says this Committee "The post-war period will bring release from wartime driving restrictions, rusty drivers, new untrained drivers, over-age vehicles, highway disrepair, and a general desire to go places." Below are the principal recommendations:

Build safety into all new highways and improvements.

Provide competent traffic engineering services in every state and city.

Rebuild depleted police forces and train their personnel.

Provide specialized handling of traffic cases in court.

Keep dangerous drivers off the road through driver license examination and improvement programs.

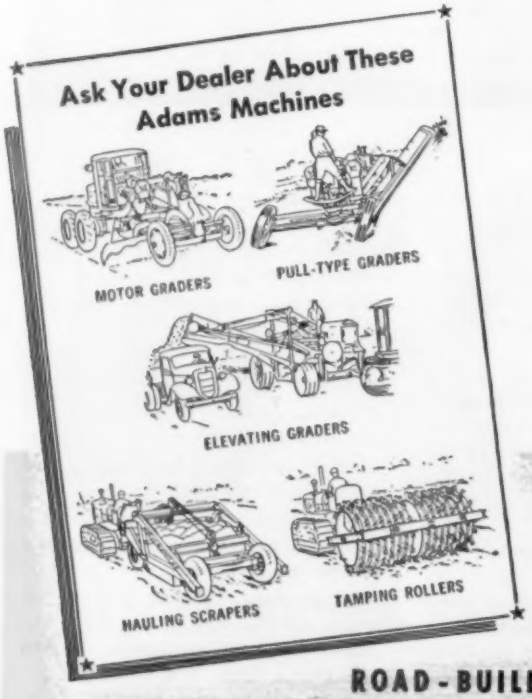
Get the facts, through accident reporting and analyses.

Enact and enforce uniform, modern traffic laws.

Inspect all vehicles periodically at official inspection stations.

NEW ROADS FROM BANK TO BANK...

with ADAMS MOTOR GRADERS



ADAMS MOTOR GRADERS are among the most versatile of all road-building machines. On most jobs—building new roads, or rebuilding and widening old ones—they handle *all* of the earth-moving involved. They cut and slope banks, build ditches and road beds *. . . and do the work exactly to specifications!*

Adams Motor Graders are fast, too—with an unusually large dirt-moving capacity. This, plus their wide range of power-operated blade positions—all obtained through fast, positive cab controls—assures maximum speed, economy, efficiency . . . *on every job!* Ask your local Adams dealer about these and many other outstanding advantages.

J. D. ADAMS MANUFACTURING CO.
INDIANAPOLIS, INDIANA
Sales and Service Throughout the World

ADAMS

ROAD-BUILDING AND EARTH-MOVING EQUIPMENT

Vol. LX, No. 5 **The American City** *May, 1945*

Facing the Facts Frankly

Chambers of Commerce Give Constructive Study to Existing Sore Spots and Post-War Needs

TIME was when many a Chamber of Commerce admitted only behind closed doors—if at all—the existence of conditions in its city which a civilized community ought not to tolerate. Among the growing evidences of a more enlightened attitude in this matter is a 1945 brochure of the Toledo Chamber of Commerce, "This *Also* Is Toledo," two illustrations from which, with the captions, are here reproduced.

Depicting on 13 of its 16 pages housing conditions such as these, the brochure points out that:

"With the exception of New York City, the only slum clearance yet achieved has been the public housing developments built by the federal government. While the federal housing units constitute the only bright spot in the slum sections they are too few to relieve the situation. Although some federal housing may be necessary for the very lowest income groups, private enterprise can and should rebuild for the vast majority of our population.

"The solution lies in enabling legislation to allow the cities to acquire the blighted areas through the power of eminent domain and then to turn them over for rebuilding by private business concerns. Ohio does not have such legislation. Many other states do, however, such as New York, Wisconsin, Illinois and others. An urban redevelopment bill has been drafted for Ohio and it is hoped that some action will be taken in this session of the General Assembly.

"Such legislation, in brief, empowers the city to acquire slum property through its power of eminent domain. The land thus acquired is leased or sold to any private individual, company or corporation planning to rebuild the area. Certain controls are exercised by the municipality to insure that the redevelopment projects correspond to an over-all Master Plan and that the dwellings proposed are in conformity with the needs of the area and with building standards and requirements.

"Toledo must face realistically its post-war problems now, not in some far dis-

LEFT: *"From areas such as this, common to every city, come juvenile delinquents, criminals and the anti-social members of the community. As taxpayers we maintain the reform schools, the penal institutions, the asylums and hospitals to house the maladjusted and ill of our society. By failing to provide adequate housing and the simplest elements of sanitation are we perpetuating an extravagant waste of human resources? Should we consider the cost of slum elimination in relation to the taxes we pay to house its denizens in reform schools, hospitals and penal institutions?"*

BELOW: *"This house, occupied by a war worker, bears a big placard 'Condemned—a fire hazard.'*

"Inside sanitation is virtually non-existent. Black masses of flies cover everything. The toilet is permanently out of order and has flooded the room. Sink and cooking facilities are exceedingly meagre.

"This house provides the only shelter this family of six can find. They pay $8.00 per month and are eager to move—if they could find a place."

The captions accompanying these illustrations are reprinted from a brochure, "This Also Is Toledo," published by the Toledo Chamber of Commerce, Toledo, Ohio. It is a timely companion to a folder, "This Is Toledo," issued by the same organization, to set forth the attractions and opportunities of that city.

tant future. Our city can go forward as a progressive community by taking steps to correct some of the existing evils. Toledo has long been underbuilt as far as modern housing standards go."

In a statement accompanying this brochure, the Toledo Chamber of Commerce makes clear its forward-looking policy:

"Chambers of Commerce in the past have gained a reputation for bragging about their respective communities. The modern Chamber is realistic, factual, constructive. It has largely renounced the over-statement and exaggeration of some years ago. It still uses publicity as an effective tool for community upbuilding. So, instead of being an example of publicity in reverse, we submit "This *Also* Is Toledo" as a piece of realistic, factual publicity, pointing the way straight ahead to a cleaner, healthier, economically more sound city in the future."

Indianapolis Chamber Sponsors Slum Clearance Legislation

THE "Redevelopment Act of 1945," adopted by the Indiana Legislature with the support of the Indianapolis Chamber of Commerce, is another recent example of a frank and aggressive facing of the facts by a city's leading commercial-civic organization.

The declaration of public policy in this new law recognizes the existence of blighted areas in which the housing accommodations "are to a large extent unsanitary and unsafe" and that their use "causes an increase in and spread of disease and crime, constituting a menace to the health, safety, morals and welfare of the residents."

The act also states that "the clearance, replanning and redevelopment of such blighted areas is a public and governmental function which cannot be accomplished through the ordinary operations of private enterprise."

To remedy these conditions by a combination of public aid and private enterprise, the city of Indianapolis, through a municipal Department of Redevelopment, is given power to acquire slum or blighted areas and to clear, replat and sell or lease the site or portions of it to private interests for rebuilding in accordance with plans to be approved by the City Plan Commission.

To cover the difference, if any, between the cost of acquiring such areas and the price at which they can be sold or leased, the Department of Redevelopment is authorized by the act to levy each year a special tax upon all property, both real and personal, within the corporate limits of the city; this tax not to exceed for the first two years 10 cents on each $100 of taxable valuation, and not more than 5 cents for $100 in subsequent years.

William H. Book, executive vice-president of the Indianapolis Chamber of Commerce, is quoted as follows in the April 2 issue of *Business Action*, weekly bulletin of the Chamber of Commerce of the United States:

"The city's contribution will be made by whatever degree it receives less from the sale of the land than its purchase price and cost of clearing. If there should be any profit, it would be added to the Redevelopment Board's fund.

"We anticipate, however, that there will be a continuing expenditure by the city, which will be in the long run perhaps almost, if not entirely, offset by reduced costs of crime and disease control, and increased tax valuations.

"It may be of interest to know that we believe that within 10 years of operation under this law, with a gross expenditure of $5,000,000 or $6,000,000, and with a net expenditure of very much less than that, we can really clean up the slum areas in this community."

Copies of the Indiana Redevelpment Act may be obtained from the National Chamber's Construction and Civic Development Department, 1615 H Street, N. W., Washington 6, D. C.

For Fiscal Rehabilitation of Zanesville

THE cumulative ill effects of Ohio's tax-limitation law are becoming increasingly evident in Zanesville, as in many other municipalities of the state. Recognizing the fact that urban prosperity cannot thrive on niggardly public expenditures, the Zanesville Chamber of Commerce, through its research department, has issued a proposed "pay as you go" plan for the fiscal and financial rehabilitation of its city. Indicating the willingness of Zanesville's business and civic leadership to face the future frankly, this statement calls attention to the fact that, as of the beginning of 1945, the city of Zanesville owed $94,000 in unpaid current bills and $50,000 in defaulted tax-anticipation notes, and adds:

"The taxpayer will have to pay this city debt and also provide sufficient funds to rebuild and rehabilitate Zanesville, which is just about worn out. Take a look at our streets, buildings and mechanical equipment. The most practical way and probably the least costly way to rebuild the city is to go on a 'pay as you go' basis. If Zanesville is to be progressive, protect local business as well as *attract* new industry to locate here, it cannot be a *bankrupt city*. . . .

Not Even Minimum Service to the Citizen

"Zanesville's tax rate is miserably low. Property is being taxed very little to finance present services and nothing for future improvements. . . .

"The city definitely needs $60,000 more a year to balance a budget which does not even provide for minimum service to the citizen.

"Zanesville attempts to operate a garbage collection service for some 11,500 homes with three trucks which even now are ready for the junk yard. Some $13,000 from the general fund was expended for this purpose in 1944. At least 9 new trucks are needed at an estimated cost of $3,000 each. Probably 24 men at an estimated $1,500 a year will be needed to man the trucks at a cost of $36,000 a year. This level of expenditure will give Zanesville a decent garbage removal.

"Present street lighting is inadequate for the safety of pedestrian and traffic. A deficit of some $55,000 must be paid. Also new fixtures, lamps and equipment will give better illumination for less money. An estimated $60,000 to $65,000 is needed to light Zanesville adequately."

Other urgently needed municipal expenditures cited in this Chamber of Commerce study are airport improvements, parks and recreational facilities, adequate police facilities, and a reserve for essential post-war projects.

Severe Fiscal Handicaps

Under the Ohio one-percent tax law, a referendum with a 65 percent favorable vote is necessary if the statutory 10-mill tax levy is to be exceeded. The 10-mill or $10 tax per $1,000 assessed valuation is allocated to the city, school and county governments by the County Budget Commission which administers the state tax limitation. Zanesville is given only $4.10 per $1,000 and only $2.70 of this amount can be used for city operation, the rest going for debt requirement. The alternative is municipal starvation or an "inside" the 10-mill levy bond issue. But, as this Zanesville statement points out:

"Every time such bonds are floated, the county budget commission reduces the amount which would otherwise come to the city for operating expenses. A 5-mill levy will give the city sufficient funds to operate and make improvements during the next five years. If during this time *no more* inside *bonds are authorized by council*, approximately $156,000 in interest and principal will have been paid off. This amount can be available for operating expenses."

This proposal may be the best solution of the immediate problem. But would not Zanesville and other Ohio cities be well advised to unite in demanding state legislation which will remove the severe fiscal handicaps under which municipal governments in that state are now struggling?

For another example of fact-facing by Chambers of Commerce, see "Terre Haute Babies Are Gurgling with Glee," page 141 of this issue.

New Incinerator Solves a Wartime Problem

Memphis, Tenn., with a 30 percent rise in population including military personnel, found it had an average of almost twice as much garbage remaining unburned as it had been able to take care of with its incinerators running to capacity. In order to handle more adequately this surplus the government granted the city priorities to build an incinerator designed to consume 300 tons daily—a capacity sufficient to burn all materials which might become a serious public health menace.

By T. E. MAXSON
Office Engineer
Department of Public Works
Memphis, Tenn.

THE garbage disposal facilities of the city of Memphis, already taxed to capacity, were unable properly to dispose of the additional load occasioned by the influx of some 35,000 civilians and 40,000 military personnel. This problem reached such proportions that it became imperative to provide additional facilities.

To meet the problem we applied for priorities from the War Production Board to build an incinerator. Permission was soon forthcoming and the actual work of construction was started in the latter part of 1944. The plant was completed in the early part of 1945 after which it underwent a period of warming up or curing. When this was over the plant went into full operation on April 20, 1945.

The collection and disposal of waste materials is a part of the public service rendered by the Department of Public Works. Up to the time the incinerator went into operation in April of this year disposal was accomplished as follows:

All vitally needed waste materials capable of being salvaged were and still are sorted and sold under an annual contract with a private salvage dealer. Our two old incinerators have operated for several years at full capacity for 24 hours a day burning an average of 268 tons of waste materials daily. Even pushing these plants to the very limit it was necessary to dispose of some 458 tons of mixed refuse and garbage every day on open dumps. A large percent of this material was highly putrescible which as time went on created a greater and greater public health problem.

Design of Plant

The new incinerator was designed to meet this emergency. No attempt was made to produce steam as an auxiliary product or to utilize the heat generated during the burning process.

This plant is of the low temperature type. Designed by the Engineering Division of the Department of Public Works, it incorporates features which we have found to be desirable and economical through some 35 years of incinerator operation.

The 12 furnace cells are arranged as twin installations of 6 cells each. There are an equal number on either side of the chimney and connected to it through secondary combustion chambers and breeching. Each cell is 6 feet square. The grates, which were cast locally to our specifications, are the fixed type. They are cleaned by rakes from the firing floor. The plant was designed to burn from 250 to 300 tons when operating on a 24-hour basis.

The operation is simple enough to be performed by unskilled labor with a minimum of supervision. This fact is reflected in the low cost of $.58 per ton of waste burned in one of our old incinerators, of a similar design.

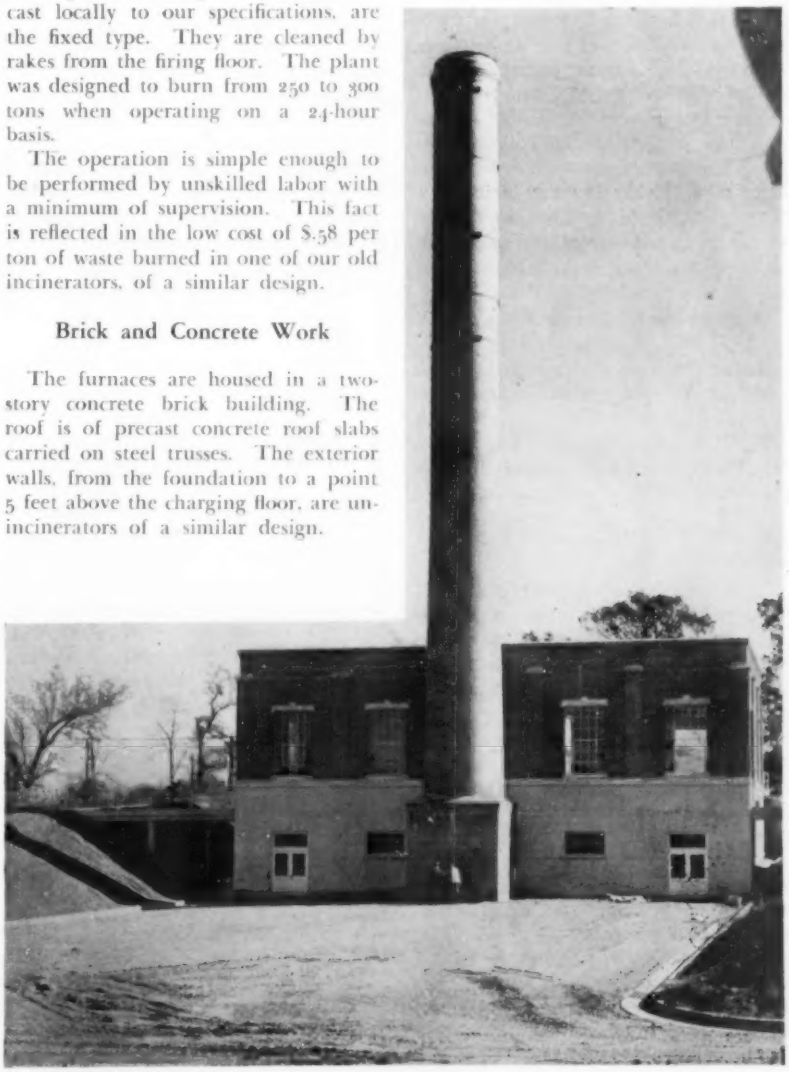
Brick and Concrete Work

The furnaces are housed in a two-story concrete brick building. The roof is of precast concrete roof slabs carried on steel trusses. The exterior walls, from the foundation to a point 5 feet above the charging floor, are unincinerators of a similar design.

with pilasters spaced at approximately 16-foot centers. The superstructure is common hard burned shale brick laid up in cement mortar with precast concrete lintels, column caps and coping. The charging floor is reinforced concrete except over the furnace arches where the concrete floor slab is carried on the fill over the arches.

The outer walls or shell of the furnace units are made of common hard shale brick laid up 17 inches thick in cement mortar with mortar joints struck off clean on both exterior and interior faces.

The general contract covered the construction of the building, a chim-



Memphis' new incinerator from the rear showing the 80-foot driveway. This elevation is at the firing floor level.

ney 6 feet in diameter and 125 feet high, and the outer shell of the furnaces. All fire brick work and furnace construction except the outer furnace walls were done by city forces of the Department of Public Works.

Special Features

One of the special features of the design is the provision for dumping and storing material on the charging floor. The north and south doors are at charging floor level making it possible for trucks to drive directly onto the charging floor. With this arrangement, government trucks can comply with their instructions to dump loads directly into the furnace and the driver can certify that the material from his truck has been burned.

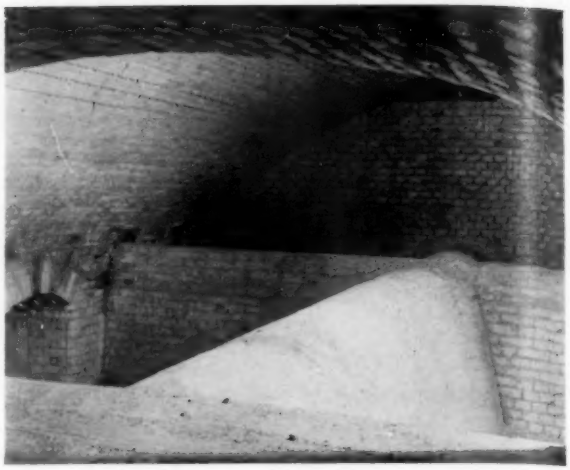
The threshold of the three doors on the east side of the building is 5 feet above the charging floor. Here trucks back up to the doors and dump their load. With this arrangement the eastern portion of the floor may be used to store materials to be burned during the night or between collections, thus providing waste materials for a uniform rate of charging the incinerator throughout the day. The sorting and salvaging of paper, rags and other materials vital to the war effort are done on the charging floor.

Another special feature is the wedge-shaped drying hearth 3 feet 8 inches wide at the base and rising 3 feet 6 inches above the grates. This hearth is located directly under the charging hoppers and divides each 6 cell unit to allow 3 cells on each side of the drying hearth.

Blower

The forced draft blower is located between the furnace units on a platform midway between the firing floor and the charging floor. This forced draft fan is an American Blower Corporation Sirocco No. 5 with a 15 hp electric motor equipped with a magnetic push-button starter and an Allis-Chalmers vari-pitch drive sheave. The fan will deliver a minimum of 15,000 cubic feet of air per minute. This air is conducted into a specially designed damper junction between the two units and is carried through terra cotta ducts to be discharged under the grates. The damper arrangement allows the forced draft to be used with either unit or both. The forced draft system is used only for extremely wet loads.

The arches over the furnaces are composed of three layers: first, a 9-inch brick ring; second, 4½-inch fire brick ring; and finally, a 4-inch common brick ring. The fill above the arches is composed of brick bats and very lean dry mix concrete. The concrete floor over the arches is laid directly on the fill and is separated from the rest of the charging floor by expansion joints.



An interior view of this incinerator showing the drying hearth and arch in one 6-cell unit.

Fly ash is controlled by baffles and sloping floors in the breeching chambers and is collected in the final combustion chamber before entering the chimney. A special grating constructed of a 7-inch square terra cotta flue lining is built into the chimney breeching.

The incinerator is located on a site of approximately 2½ acres and was graded and landscaped by city forces. A 30-foot road completely encircles the plant providing entrances to the charging floor and an 80-foot roadway entrance to the firing floor level at the rear, to allow the ashes and burnt cans to be loaded for hauling to the city dump.

The General Contractors for the building were the Dunn Construction Co., Inc., of Birmingham, Ala., and the Polk Smartt Paving Co. of Chattanooga, Tenn. Members of the Department of Public Works prepared the site and constructed the fire-brick work. The cost of the project was approximately $104,000.

The work was done under Walter Chandler, Mayor, and Oscar P. Williams, Commissioner of Public Works.

Public Works Advisory Committee Formed

FORMATION of a Public Works Construction Advisory Committee, composed of representatives of eleven national organizations engaged in or responsible for the planning, design, construction or operation of public works, has been announced by Major General Philip B. Fleming, Federal Works Administrator.

The committee held its organization meeting in the Federal Works Building on April 26.

General Fleming has designated Colonel William N. Carey, Chief Engineer, Federal Works Administration, to act as contact between the Committee and the Administrator.

Committee members and the organizations represented are:

FREDERIC BASS, American Public Works Association.
E. LAWRENCE CHANDLER, American Society of Civil Engineers.
F. STUART FITZPATRICK, United States Chamber of Commerce.
J. W. FOLLIN, Producers' Council, Inc.
H. E. FOREMAN, Associated General Contractors of America, Inc.
HAL H. HALE, American Association of Highway Officials.
S. LOGAN KERR, American Society of Mechanical Engineers.
EARL MALLERY, American Municipal Association.
MAJOR EDMUND R. PURVES, American Institute of Architects.

Invitations also have been sent to the Building and Construction Trades Department of the American Federation of Labor and the United States Conference of Mayors asking that they select members to serve on the Committee.

"Subjects for consideration by the Committee may be proposed by its members or by the Administrator," General Fleming said. "It is intended that the subjects be confined to those at the level of the Federal Works Agency as a whole. The Committee will organize itself and select its own officers. It will meet at the call of its chairman or the Administrator. Members appointed by the respective organizations will serve without compensation by the Government."

City Problems in the "Air Age"

By JULIAN WHITTLESEY, A.I.A.

PLANS drawn now for airports will affect our local and national welfare and security for many years to come.

The air map is a new sort of map. It has no political lines on it, nor is it concerned with earth-bound geographic features. It is a map of opportunity drawn from the direct criteria of Convenience and Necessity—now a standard term in aviation language. The air map promises further to unloosen the resources of the state.

In this discussion I shall probably use the term "city" more frequently than the term "town." Actually, their interests are identical in the matters at hand. The smaller cities or towns, however, will in point of time have the better chance to cope with all of these problems before they are beyond dealing with, and so may hope to come out better, "pound for pound," than big cities. The actions of you who control cities and their policy will have to be carefully balanced between those which are inspired by *competition* and those which are governed by *cooperation*, because an airport system is like a huge plant and grows in successive stages, each part of the system being interdependent upon the other.

In brief, this is what you must do:

1. Find out your position on the present air map. You can help draw this map but you cannot draw it all alone.

2. Find out what types of flying you will have and determine the kinds of ports you will need for the next 5 years, and extend this as far as you can—say, 10, 15, up to 20 years.

3. Determine the location of your ports and the connecting roads you will need for fast ground connections.

4. Acquire your airport sites and your land for roads, formulate and *pass* zoning legislation, and get down to detailed planning of the work needed for the next 5 years—and build that work as soon as you get the green light.

Your Partners—While doing these things, you will keep yourself squared away with the Civil Aeronautics Administration, for it is that agency which is entrusted with nation-wide airway control; and you will also be in constant touch with airplane operators and manufacturers.

I will come back to these steps in more detail, but will first list the competitive factors and the cooperative factors which will govern your actions all the way through the stage development from now on for 5, 10, 15 or 20 years. At what point you will accomplish a given stage will depend partly upon your initiative in *competition* and partly upon *cooperation*, i.e., what is happening and being planned in dozens of other places with which you are intimately connected by the air map. There are five competitive factors and several cooperative ones.

Aviation's Future

Plans drawn now for airports will affect our local and national welfare and security for many years to come.

That fact was the motivating reason for a State-wide Conference for Planning Aviation Services and Facilities, held in Albany, N. Y., on January 19, 1945. This important meeting was jointly sponsored by the New York State Department of Commerce, New York State County Officers Association, New York State Conference of Mayors, and New York State Association of Towns.

Readers of **The American City** ***in all parts of the United States will, it is believed, find much of interest and value in the accompanying discussion of "City Problems in the 'Air Age,'" presented at this conference by Architect Julian Whittlesey, partner in the New York firm of Mayer & Whittlesey.***

The complete report of the conference is available on application to M. P. Catherwood, Commissioner of Commerce, Albany, N. Y.

Competitive Factors

The competitive factors are as follows. They operate between cities themselves and also among various forms of transportation.

1. *Cost of Flying*—The cheaper you can make it, the more it will spur the air traffic and business of your city. You will seek by efficiency of ground facility plans to attain lower operating costs on the *ground* than do the ports of other cities. The airplane manufacturers and the airline operators will attend to their part in lowering costs in the *air*.

2. *Travel Time*—The shorter the travel time to and from your city the greater will be its desirability from a business and residential point of view. The airplane manufacturer and the airline operator will do their parts to lower the *flying* time. You will develop highway and rail connections calculated to make ground travel *time* (not necessarily distance) between your ports and the centers they serve faster than does the other fellow.

3. *Convenience and Pleasure*—Airports are the new show windows for the community and they should be better and more profitable in this respect than some of the railroad station areas and bus stations I can think of. If the airport is reached by going through unattractive localities with a million red lights, and if the installation at the field consists merely of a control tower, a shanty terminal and a rash of hot dog stands, it will adversely affect air traffic as a whole and your city's portion of it as compared with others.

4. *Action Now*—You will act earlier than the other fellow to secure air travel to your city. This means to make plans, investigate sites, purchase land for *all* the requirements you can foresee, plan the road system, and acquire land for it, formulate and pass zoning legislation and actually build *now* such roads and airfields as will be required for the next 5 years. There is not a moment to lose in taking these steps.

5. *Follow-Up*—You will always be more ready than the other fellow to follow up and build the later stages of airport development as these come due. The completeness of your plans first drawn and your boldness in adjusting the location of public and private works of smaller scope which are found to interfere with the continuing development of your program will always keep you in the advantageous position.

So much for the competitive factors. As for the cooperative factors, they are of *parallel* importance. They also operate between the cities themselves and between other forms of transportation, and are as follows:

Cooperative Factors

1. *The Cooperative Port.* Not every city can swing a port alone. Not every city can draw the air map all to itself. Your size and potentialities have probably been studied by airline operators. And they generally know their business—it *is* their business. The potential of one or two other neighboring cities or towns of nearly equal size may have been added together in order to justify the position and classification given you on the present map. If that is the case, this is your signal—but it is for cooperative rather than competitive action. It is not a question of the winner being the one who

builds the field just inside *his* city line. Precipitate action in this respect may make all of you the losers and whoever builds the field in the wrong place foots the bill.

2. *Future Community Ports.* A later stage in the air system will call for different types of ports, each assigned to different functions which I will later describe. Separation of ports according to their special functions will have several advantages over duplication of ports, each having mixed flying. Accordingly, some cities—even big ones—will find it advantageous to cooperate on a common field for freight, or for plane storage and service, rather than that each city try to support one such port of its own. Reserve tracts ahead of time for such ports.

3. *Surface Transportation.* Aviation will make one more cut in the transportation pie, but remember that the pie will then be a bigger one. You will need smooth cooperation of bus and train service, with emphasis on frequency of bus schedule—in order to support air traffic. You should sponsor and make plans for the essential facilities common to them. At the airport you will, for instance, need freight sheds and a mail depot and parking and loading places for those carriers—all planned for the sole convenience of those carriers and away from passenger traffic; also lots of parking for private autos of travelers, sightseers, personnel, etc. At the other end, in town, you will need a convenient collecting station for air passengers close to railway and bus stop, also helicopter parking, landing and pick-up areas.

So much for the list of competitive and cooperative motives which will govern you throughout.

Now let's get back to the things you are going to do—in more detail and why.

1

The Air Map. The CAA has prepared an air map—showing the status of airports and airways. The current one is called the *5th Revision Map.* You may or may not be on it. It shows present and future ports and ports to be expanded. The CAA didn't make this map alone; the airline operators and the cities themselves cooperated. Class 4 ports and some Class 3 reflect the approved or certificated applications of big airlines plus present main airways. Class 3, and sometimes Class 2, reflect present minor lines, plus current feeder line applications and, in some cases, reflect the action if not the anxiety of a city to secure new feeder lines to it. Class 2 and Class 1 designations generally express private flying, existing or likely to spring up, if only on the basis of a city's population or of its having a college there or an important vocational school planned there. Some cities not yet having given thought to a port are surprised to find themselves on the map. (I have known some even to be displeased.) At any rate this is a signal to that city. It may be a signal for a community port or for its own port. Other cities, surprised *not* to be found on it, *will hop to it* and *get on it* alone, or get going on a *community* port. That briefly is how the map is made and how you are a participant in it.

2

Types of flying and types of ports you will need.—The following kinds of flying must be considered: scheduled passenger traffic, scheduled freight and mail, either on through-traffic or on feeder-line schedules or both; private plane flying, unscheduled business and freight by local industry, with the helicopter as a special form of either private or scheduled flight; finally flying schools. While private flivver-scale helicopter operation is by no means around the corner, it will come, and in the meantime, helicopter taxi between airfields, and local helicopter mail and package service do appear to be around the corner or here now.

Which of these types you will have, if not all of them, for the next five years and later depends on your city or town, on its size, its markets and on its way of life and work and on its temperament. Airlines, trade boards, manufacturers and aeronautic associations currently make local surveys of air needs. These should be studied and extended from your point of view. In many cities not every category will require a separate field immediately and for each purpose. Some cities may find that even eventually several kinds of flying can be taken care of with one field.

This much may be said without qualification: Every city with any pretensions to or hope of a future in an air age will immediately want at least two fields—one for scheduled flying and one for private flying—also provision for *helicopter* flight. As air traffic grows, economy of operation will call for more separate ports according to different types of flying. This separation first occurs between scheduled and unscheduled flying and the need for it is perfectly obvious in our big city ports today. The private flyer cannot comfortably nor cheaply mingle in the highly regulated traffic of the busy commercial port. (G.I. Joe private flyer will want a port quick to hop in and out of, where he can fly with a minimum of expense and formality.) The expensive ground facilities and traffic-control apparatus for such a port must devote its full efficiency to lowering the operating costs of commercial flight. The necessity for this separation will travel on down the line, affecting smaller and smaller communities as air traffic grows and short-haul operations spread. Therefore, your plans for later stage development must be drawn for more than one type of port, one or more of which may be a joint city port.

3

Location of Ports—In the first place, CAA recommends that ports be up to 6 miles apart. Military experience indicates that some exceptions may be warranted for the trained schedule flyer. By the time the engineering factors in field locations have been considered—such as topography, soil conditions, drainage cost, proximity to natural materials, and the flying conditions, weather factors and air-routes, etc.—you will find it a thoroughly complex job of city planning to secure port sites consistent with your in-town objectives.

Road Connections — Highways and streets will get in your way or they won't be there at all—or you will be lucky—and even then they may have to be widened or straightened or extended to cut down that *ground time factor.* You should have a fast radial road from port to center; and for other and future ports you need suburban or belt roads to interconnect them and feed them from outlying districts and other towns. Such a road system is essential to any modern city and is long overdue, so that the cost of this is not entirely chargeable to airport work.

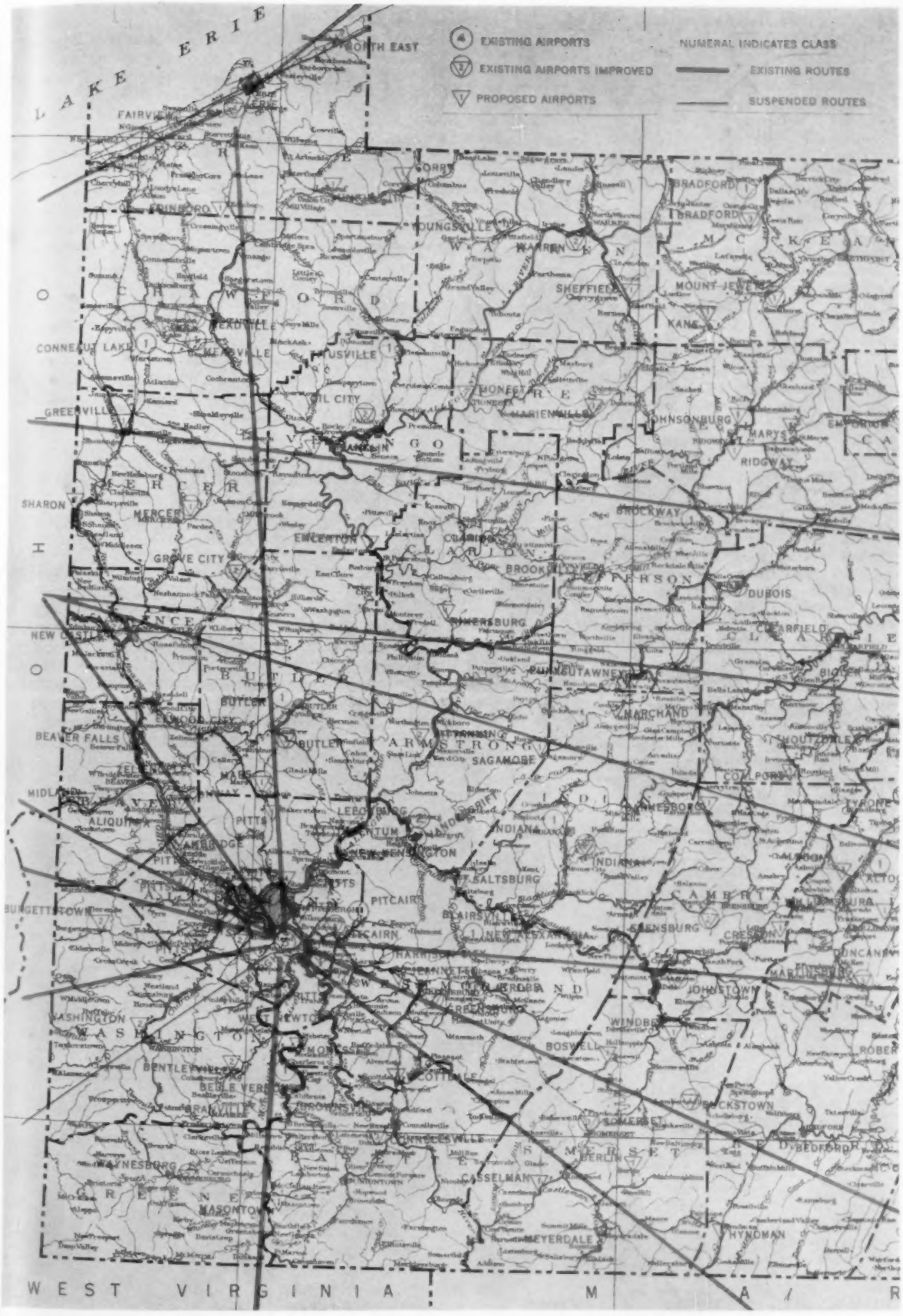
Rail Connections—Where possible, a field should be so located that rails are convenient or a spur can be extended, especially for cargo economy and because manufacturers may want to ship both by rail and air or by intershipment. I have mentioned this ground linkage of roads and rails at several points but cannot emphasize it too strongly. You will, of course, realize that the short haul flight will be discouraged unless it has even shorter ground time connections than the long haul flight. A 30-minute flight with a 15-minute ground time at each end is a discouraging matter—and you will take your auto or the train—whereas a longer flight (two or three hours) with even, say, 20 minutes on the ground at each end is a practical matter.

Obviously no one site will perfectly meet all the conditions. The weight to be given each factor will vary in each case. Cost figures, convenience, speed will have to be weighed, expert judgment and common sense used in selecting one among possible sites. As to the question of inlying versus outlying sites, any type of field should be as close as possible to the center it serves in terms of *time* though not necessarily in miles. The private field can be quite close in, as it does not require long runways and can have a relatively steep glide angle (namely, about 20 to 1). The training field is better well out. The scheduled fields will be the more outlying ones because there you can get more land, avoid difficult zoning, avoid obstacles and get better flying conditions for instrument weather, and avoid noise.

4

Acquisition of Sites—For 5-year requirements—You should buy land.

For future requirements—To provide additional fields, expansion and protection, you should buy *or* lease *or option.* You should zone for *all.*



WESTERN PENNSYLVANIA SECTION OF THE CAA FIFTH REVISION AIR MAP

Printed in two colors, the original map shows the airport locations much more clearly than in this reproduction

Present land-uses—Farming or whatever, can remain undisturbed until time of development.

Land valuations—Airfields change the patterns of surrounding land values, up and down. This is a theme with many variations. The site which comes as a surprise does damage.

Safeguards—Early location of all possible sites is the best assurance. It allows you and private interests to plan intelligently for land-use knowing well in advance what the factors are.

If there should be any kind of a boom after the war, it will be a housing boom. Housing sites are not tied down by nearly as many requirements as airports, so by selecting airport sites first you are not harming the housing industry. You will even be helping it by enabling the developer to know where the airports will be, where the highways leading to them will be. If you wait, you will pay more money for your land. You may even find the first houses of new developments are in your way.

One word about related businesses and their land values. Attractive and easy-to-reach ports are conducive to neighborhood shopping and recreation, also to park use in the safety zones. An active port will develop substantial business values. The city should reserve and plan future sites for these while securing its airport lands. Otherwise the land value increments which the city has created will be skimmed off and dissipated by speculation and a helter-skelter of unsightly commercial construction will wax and wane. It isn't that the city should go into these businesses, but it should have an eye to what will be needed and where it can best take advantage of the port and road system. Businesses at or around airports are parking, service station, restaurant, news reel, over-night accommodations, air offices, airplane and accessories sales, air-wearing apparel, and sightseeing. The exploitation and encouragement of these values requires forethought when you locate and zone your port sites.

5

Your Partners—Your partners in all this work are the manufacturers and operators. The CAA works with both. You can rely upon these partners and on the CAA for progress in the plane itself in its safety features, establishment of air lanes and the coordination of traffic from air traffic control centers. The city's part, fully as important, in establishing the ground system, leads me to the next point, namely, the team that can properly do your planning and carry out your objectives. You will want the following—the city planner or planning commission that will also consult or call upon various department heads, such as highway commissioner or public works chief as required. You will want an architect-engineer-planner who thoroughly understands airport design and air implications, and I warn you, you won't usually find him in your own town. You can use him either for the whole job or get his continuous consulting advice with your local architect designing specific structures if you prefer it. You will want frequent consultation with airline people, particularly those likely to pass through your city. You may occasionally want to consult aircraft manufacturers for technical advice, though you should be able to rely on your architect-consultant and airline people for that, and the CAA for technical and financial consultation. That's the team with the coaches.

Things Not Discussed

The ins and outs of zoning.

The emergency flight strip.

My particular angles on legislation, relation of federal funds to city and state authorities from my slant as a planner.

Arrangements of flying fields and the ground facilities.

The point of economy where one type of flying becomes separated from others.

Feeders and trunk line relations.

Settle It Now

This has been a brief listing of the city's job to fit itself for the Air Age. It will require time for study, planning, land acquisition, and actual construction. Cities and towns which grasp the implications of the Air Age will hit the mark. Set your sights high. All your partners—the air line operators, the manufacturers, and the CAA—have set their sights high and they are going to *shoot down* the air rates. You will be surprised by what the war has done for aviation and you will be surprised what aviation will do for you after the war. No air-minded city has an instant to lose in getting under way. For that matter, some cities have not an instant to lose in getting air-minded. Whatever your policy is going to be, *get* it under way and *settle* it now.

Three Cities and Los Angeles County Move to Improve Race Relations

THE growing importance of race relations as a local government problem in the minds of public officials is illustrated by the recent action of Cleveland, Cincinnati and Boston—three of the nation's largest cities—and by Los Angeles county.

Cleveland's city council early last month created a 12-man community relations board "to promote, develop and maintain effective and proper relations in the community among the various racial, national, religious and cultural groups," the International City Managers' Association reports.

Cleveland's mayor appointed the board, which in turn named an executive director. Work of the board will be financed by a special municipal appropriation.

In Cincinnati, the director of public safety created a "race relations detail" in the police department, one of the first efforts along this line in the nation. One of the three officers already appointed is a Negro patrolman with 20 years' experience. Following an intensive training period, the race relations detail will give in-service training in race relations to other members of the police force.

Under the Boston program, supervisory officers of the police department have been taking a course, "The Police and Minority Groups," with Harvard University cooperating in the project.

As part of its in-service training program, the Civil Service Assembly reports, a 5-day institute on interracial relations was held in March for Los Angeles county officials and employees to give them an understanding of problems of minority groups.

Five 3-hour sessions were held, with each session attended by around 500 county employees. Problems of inter-group relations affecting the entire structure of community life and county governmental services were analyzed and defined, with the subject matter of the program covering various aspects of the orientation of minority groups, including cultural, housing and employment problems.

Plans now call for a series of departmental employee conferences as a follow-up of the inter-departmental sessions. These conferences will be aimed at applying the facts and principles developed during the March institute to the specific problems of the department. By this means, employees unable to attend the original institute will be able to participate in the overall race relations program.

See also THE AMERICAN CITY, April 1945, page 86.

Veteran Employment

How one city is meeting the problem of employment for returning veterans has been described in a series of articles by Agnes S. Meyer published in *The Washington Post* and now available in booklet form as "Community Service: The Model Center at Bridgeport, Conn.," *The Washington Post*, Washington, D. C.

Front-Line Municipal Services In Two Liberated French Cities

Extracts from the tersely worded reports of the United States Army Engineers tell a dynamic story of the way plans were laid to renew essential utility services in the French cities of Nantes and Rennes.

NANTES and Rennes are not American cities. In fact, during the Allied drive against the Germans, they ceased to be cities at all. They became instead strategic military spots on the map of France that had to be occupied. And the utilities that served them were no longer strictly municipal services. They were military considerations that needed careful analysis in order to make the cities effective in defeating the enemy.

These extracts from Army Engineer reports, recently released, tell what damage was expected during the assault and what measures were planned to counteract this damage.

Nantes—Water Supply

Nantes was a city with a peacetime population of approximately 240,000 including its suburbs. Normally its daily water consumption averaged around 6.5 mgd. It is supplied by a river nearby; it has a slow-sand filtration plant and a 6.6 mg high-level masonry storage reservoir. The report gives the following analysis of probable damage and recommended repairs:

Pumping Plant—If the city is evacuated quickly, the French operators of the water plant may be able to prevent sabotage. However, this is problematical and it must be assumed that the pumps and engines will not be usable. An examination of air photos indicates that the plant has already been extensively damaged by bombing.

Filter Plant—Since the filters cover a large area, it would require an excessive amount of explosives to do any extensive damage. Consequently, they may be expected to be in good condition. . . . Central valves and filter piping can be expected to be totally inoperative.

Reservoir—Since the reservoir is a masonry structure and is covered with earth it may escape with light damage.

Distribution piping—The extent of damage to the distribution system piping will depend largely upon the degree to which the city is subjected to bombardment. It is probable that supply lines connecting the pumping station and reservoir and some of the principal distribution mains will be systematically damaged.

Emergency Operation—It can be safely assumed that all pumping equipment will be damaged beyond repair but that the filters can be placed in operation after making minor repairs. Two low service portable pumps, one of 1,450 gpm and one of 970 gpm capacity respectively, or other combinations of pumps to provide equivalent capacity, can be used to pump direct from the river to the filter plant. Since the maximum head of the distribution reservoir is 198 feet, it will be necessary to connect two 1,450-gpm high service pumps in series to pump from the filters to the reservoir. The capacity of two such pumps in series would probably be about 3 mgd. In event a portion of the slow sand filters are out of service, it might be possible to convert a part of the roughing filters to slow sand filters if additional capacity is required. In the event both the filters and pumping station are out of service, water can be pumped direct from the intake to the high service reservoir, using two 1,450-gpm pumps in series. The reservoir would then be used for a coagulation and settling basin and the settled and clarified water siphoned off to the distribution system by gravity. A chlorinator to sterilize all water used will be needed.

Labor for Repairs—	*Man Hours*
To install 4 pumps	800
" " chlorinator unit	50
" " 10 hydrants	50
" " 10 tap ranges	100
" repair reservoir	1,200
" " piping	1,200
" " intake and filters	800
	4,200

This work can be done by one General Service Company in one week.

Nantes was liberated by U. S. forces on August 9 and 10, 1944.

Sewerage—Rennes

Although many French cities are served by a sketchy or incomplete sewer system as compared with United States standards, Rennes appears to be very much above average and approaches American standards. This appears to

U. S. SIGNAL CORPS PHOTO

Typical of the destruction wrought by war is this factory building in Pfaffenhaven, France.

be evident from the fact that the town had, in 1930, 41 miles of sewers. The normal population is 87,000. The engineer-analysis of probable assault damage and rehabilitation is as follows:

Sewers—The sewer system will probably suffer damage from cave-ins either from deliberate enemy damage or damage from shelling and bombing. Deliberate damage will probably occur at junction manholes or in the large mains. Such damage will probably occur only in a few places. Breaks in the line due to bombs and shells may occur anywhere but will be of a minor nature.

Disposal Plant—Because of its relative unimportance, the disposal plant will not be damaged by the enemy. Photographs of June, 1944, show no assault damage.

Plan of Rehabilitation — Cave-ins will cause earth and debris to clog the sewers. Larger obstructions can be removed by hand labor and the pipes flushed with water. Sewer clearing rods will probably be available from the local town officials. Should large craters be blown, breaking a long length of the sewer, the gap should be closed either by use of locally procured tile pipe or built-up conduits of masonry or lumber. . . . One or two breaks may be of sufficient importance to require pumping around a break. A diaphram pump should be used, or one which will handle a large percentage of solids. . . .

Electric Power—Rennes

This city, with its peacetime population of 87,000, has an estimated 15,000 electric customers. Using 1938 figures, the annual consumption for the area is 14,914,000 kwh. Extracts from the study of anticipated assault damage and subsequent rehabilitation is as follows:

Rennes Station—Generating units, associated switchgear, and buses and connections may suffer as much as 40 percent damage. From considerations of the present inactivity of the station and the damage that it may suffer, it is reasonable to assume that no power will be available for some time.

Transmission grid and its principal sources of power—Transmission lines will probably not suffer more than 5 percent damage and the power and transformer stations will probably suffer 25 percent over-all damage. It is expected that the Rophemal hydro station and at least several other stations on the grid may escape damage.

Plan for immediate operation—A survey might first be made of all stations on the grid not in the hands of the enemy, as well as any other small stations that may be found in the vicinity. It is probable that one or more plants will be able to supply power to Rennes and that connecting transmission equipment can be immediately repaired to the extent of permitting emergency operation. In the event that this is not immediately possible, a total of 660 kw must be furnished from portable power sets and such small local generators as are found in operating condition. Portable power sets in suitable sizes may be installed separately at points adjacent to the principal loads, utilizing without transformation the rated voltage of the sets. However, if local transformer equipment is available and can be placed in operation it might be advisable to group the portable generator sets at the substation and distribute power at a higher voltage level over existing lines, the distribution voltage to be determined by the characteristics of the equipment available. . . . It is anticipated that the emergency portable equipment, if necessary, will be installed and operated by military personnel supplemented whenever possible by such trained civilians as are immediately available.

Rennes was freed on August 4, 1944.

U. S. SIGNAL CORPS PHOTO

The flood gates on the Schwammeneael Dam were blown up by the Germans. Located just east of the key strongpoint town of Schmidt on the Siegfried Line, this dam controlled the flow of water along the Roer River. Throughout the war water has been a potent weapon.

Get Your Airport Acreage Now

THE Airports Service of the Civil Aeronautics Administration advises American cities to acquire land for airports now. It points out that the demand for vacant land in the suburbs of cities and towns will be intensified by the requirements of housing in the post-war period.

While Congress debates the five bills now before it, which will implement the National Airport Plan submitted recently by CAA, communities should and in many cases are continuing their local planning for airports.

"The function of CAA is to advise those doing such planning," Charles B. Donaldson, Director of the Airport Service, CAA, said recently. "It is also our duty to see that federal money is wisely spent. If Congress authorizes our program the cost of building airports will be shared 50-50 by the local sponsor and federal government.

"If the cities can get possession of potential airport sites now, they will be in a better position after the war to provide the best possible airport facilities to their communities. Location and design of these airports is a matter in which the CAA can help and we are eager to do it. Once land which is favorable for an airport is built up, however, it is lost as an airport.

"The same condition prevails in the matter of downtown airports on the site of slum-clearance projects. Any such sites suitable for airports should be considered now by city officials."

Collecting Scrap Aids the War

Worcester, Mass., has gone all out in its drive to collect every ounce of usable waste material which might be salvaged to aid the war effort.

At Worcester a small army of boys are satisfying their desire for an active part in a vital war job by collecting scrap materials of all kinds. Here they are unloading the day's collection.

WE have heard how the Germans, particularly in occupied territory, confiscated every particle of metal for use in their war machine. Not a piece of usable metal of any kind escaped them; door knobs, metal railings, pots, pans and even cutlery were taken. Fortunately, no such method was necessary in this country. Instead, municipalities throughout the United States have cooperated voluntarily in the nation-wide scrap drive. One municipality which has been particularly successful in its salvage efforts is Worcester, Mass.

Four years ago Rae M. Spencer, head of the Davis Press, started organizing the Worcester scrap drive. Being a business man and an efficient organizer he called on trained men to do the job. As his key man he chose James J. Courtney, Head of the Bureau of Sanitation of Worcester. With the help of John H. Brooks, Jr., Superintendent of the Bureau of Sewers, Mr. Courtney organized the scrap collection system.

With practical experience in refuse collection behind him, he organized the system much like a military operation. First he established bases of operation. Then he appointed a trained member of his staff as head of each.

The organization has been so successful that it has continued to operate in the same way in which it was organized, that is, trucks with a load of boys who volunteer for the work of collecting cover the area to which each is assigned.

George H. Hill, former Chief of Police and head of the Worcester Safety Council who is Vice Chairman of the Salvage Committee, arranges for the trucks and the volunteer workers, and Mrs. Merrill S. June and the Red Cross Women's Canteen serve lunches to the hundreds of volunteers on collection days.

On the first day of the drive, August 8, 1942, when the nation's steel mills were just beginning to clamor loudly for scrap, more than 1,100 tons were collected. Later that fall plans really got under way when the *Worcester Telegram* published daily newspaper stories amplifying the need for more and more scrap, and an added committee of 35 men from all walks of life organized a drive to ferret out every possible pound of scrap available. As a result 2,200 tons were collected in October.

The plan has been thorough-going and completely successful, with drives covering every phase of salvage from waste paper, rubber, keys, tin, rags, and all types of metal. Not a small part of its success was due to the selection before the salvage drive of eight key men from the Bureau of Engineers, Sewers, and Streets to take over snow removal for Worcester. Fifty routes were mapped out and divided among the key men. The salvage collection program has operated successfully over these routes.

To quote Richard H. Cunningham in the *Worcester Telegram* of March 11 this year:

". . . . the Salvage Committee is now definitely 'big business.' It has already taken in from the sale of salvage the sum of $45,841.70 and has given some $32,000 to Worcester charities, including $14,000 to the Worcester Community Chest. Varying amounts have been donated to such organizations as the USO, the Red Cross, Boy and Girl Scouts, the Boys' and Girls' Clubs, Camp Fire Girls, Civilian Defense, Women's Defense Corps, State Guard companies, Salvation Army, Natural History Society's summer camp fund, and the *Telegram* and *Gazette* Santa Claus."

Right now there is a great need for waste paper. The need is so great in fact that everyone is urged to save every scrap. Are you doing your share to fill this vital need?

IMPORTANT!

Paper is a Number One war material shortage—because over 700,000 different *war* items are wrapped, p a c k e d, labelled, tagged, or made from paper or container board. And the Pacific war, when it speeds up, will require stupendous amounts of paper and board since double and triple packing are required for protection against weather, insects, etc.

So please—

1. Share this magazine with friends since fewer copies are printed, due to the paper shortage;
2. Then put this magazine into paper salvage;
3. And look over your store room to get waste paper of any kind to put into paper salvage.

Then you'll be doing an "extra" to aid the war effort—and to speed victory.

The Greater London Plan, 1944

By GORDON STEPHENSON
M.C.P. (Mass. Inst. Tech.);
B. Arch. (University of Liverpool);
Fellow of the Royal Institute of British Architects

"IT'S a world classic."

In those words Jacob Crane, of the United States National Housing Agency, summed up the preliminary edition of the Greater London Plan, 1944. The author is Sir Patrick Abercrombie, Professor of Town Planning at the University of London, Fellow of the Royal Institute of British Architects, and a Past President of the Town Planning Institute.

Professor Abercrombie started his larger task with the advantage of having been at work for some time on the County of London Plan. He was thus able to carry the planning principles, which he had helped determine, into the region surrounding the county.

One of the principal aims of the Greater London Plan is to discourage the further growth of industry and population within that area, and to provide for their better distribution and grouping. Professor Abercrombie foresees the need for a considerable shift of population and industries from the congested inner areas to new towns or enlarged existing communities in the outer areas. In order to secure reasonable living conditions, the Report envisages the transfer of over one million people; 618,000 from the County of London and 415,000 from the inner urban areas of Greater London.

Four Concentric Rings

The main structure of the plan is based on four concentric rings, with the County of London forming the core inside the rings and the City the heart within the core. Briefly these rings are:

1. *The Inner Urban Ring*—largely 19th century development immediately adjacent to the outer edge of the County of London

2. *The Suburban Ring*—relatively new housing areas forming the outer ring of the built-up area

3. *The Green Belt Ring*—about 5 miles deep—roughly between 12 and 17 miles from the center of London; here the open country is predominant and would remain so

4. *The Outer Country Ring*—predominantly agricultural, but containing some distinctly urban communities

Standards for net residential density, open space, public and other buildings, and shopping centers are proposed for each ring. The decentralization areas covered by the Report would be largely from the *Inner Urban Ring*. Here net residential densities of 100 persons and 75 persons per acre would prevail for different parts of the zone.

In the *Suburban Ring* there would be little change in population. Improvements in shopping, recreational, and community facilities are suggested in this zone, with the open space weaving between communities.

The *Green Belt Ring* would provide primarily for the recreation of Londoners. It would remain open in character, with existing communities studded in the green background. The inner edge of this zone would mark the limit of the suburbs.

The *Outer Country Ring* would be the principal reception area for the decentralized population. It is seen as an agricultural background with well-defined towns several miles apart. Eight new satellite towns would be developed in this zone, each with a maximum population of 60,000.

Three momentous post-war plans for the improvement and modernistic development of London have been prepared. They apply to Britain's metropolis in its larger physical regions and its smaller political boundaries. They are:

1. *The Greater London Plan,* published in 1944: a coordinated scheme for the planning and future development of the whole metropolitan *region* of London, where over ten million people live and work in an area of 2,599 square miles. It extends in an outer belt from the boundary of the County of London to points about 30 miles from the center of the city, and takes in the whole of the counties of Middlesex, Hertfordshire and Surrey, together with parts of Kent, Essex, Bedfordshire, Buckinghamshire and Berkshire.

2. *The County of London Plan,* completed in 1943, covers 117 square miles and applies to the inner, built-up area (population four millions) which includes the docks, the East End and West End, the City of Westminster, parks and royal palaces. It does not include the main business section, which is taken care of by—

3. *The City of London Plan,* 1944. This municipally autonomous area is the historic "square mile" of the original Roman city, and now the financial and banking center of the British Commonwealth of Nations. Total area covered by the three plans is 2,717 square miles.

Dispersal of Factories

The Report estimates that the decentralization of 1,033,000 people would involve the dispersal of 1,720 factories employing directly 258,000 people. It suggests that the entry of further industry should be prohibited in most of the Inner Urban, the Suburban, and Green Belt Rings, and that it should be encouraged mainly in the new towns and other selected towns in the Outer Country Ring.

Because many industries have been evacuated from the built-up areas, and because many factories in London have been destroyed, the problem of industrial decentralization should not be as formidable as it was before the war. There are now about 2½ million people in the County of London compared with the pre-war 4 million, and similar reductions have taken place in the Inner Urban zones defined in the Report.

The main road proposals are for ten radial express highways, part of a new national road system, and five concentric arterial ring roads.

Sites have been selected for a ring of airports round London. One of the sites to the west, within twelve miles of the center and with fast electric railway connection, is for transocean air liners.

The major railway proposal is that the main lines leading out of London should be electrified within the urban area. (To the south of the capital all the main lines are already electrified.)

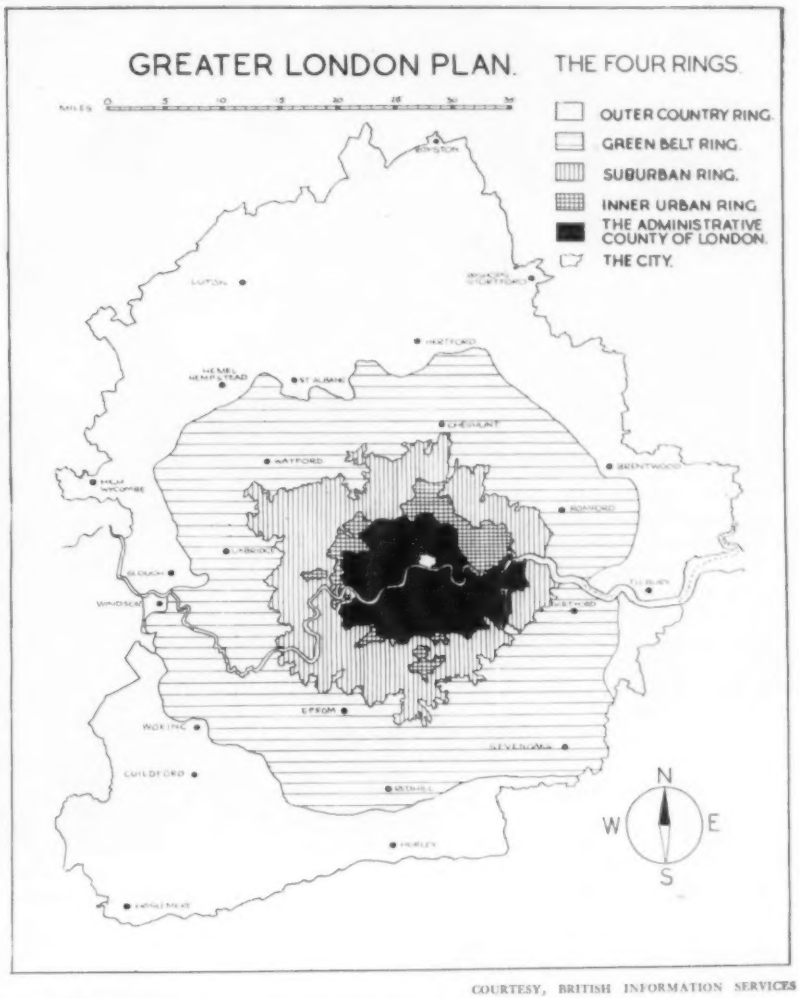
The Report suggests adequate safeguards for all good agricultural land, and all the proposals for further building development are on land of low agricultural value.

Open Spaces and Community Boundaries

The major Open Space proposal is the 5-miles-deep Green Belt Ring which would encircle the continuously built-up area. It would be primarily for the recreation of Londoners, and building in it would be severely restricted. Lesser green girdles are proposed for the separate communities, both old and new. The Plan attempts to knit the proposed and existing open spaces into a system of wedges and park strips. Standards of open space for all communities are defined, the ideal being 10 acres per 1,000 population, including 3 acres per 1,000 population for school playing fields.

Finally, mention should be made of a fundamental feature of both the County of London Plan and the Greater London Plan. Throughout the whole area an attempt has been made to define the boundaries of each community within the metropolis. Some of these communities are centered in historic towns and villages which have become embedded in the great mass of development. Others still stand free in the Green Belt or Outer Country Rings. The Plan, though developed for a vast urban population and in itself vast, will, when carried out, strengthen community interest in local government and local affairs.

The Ministry of Town and Country Planning and various other Government Departments are now considering ways and means of implementing the Plan so that it may come into immediate effect in the period of reconstruction which lies ahead.



COURTESY, BRITISH INFORMATION SERVICES

Professor Patrick Abercrombie's Plan for Greater London, devised to discourage further growth of industry and population in the area and to encourage, through redistribution and grouping of peoples, the enlargement of existing communities in the outer areas.

Retirement Systems for Municipal Employees

RETIREMENT systems for municipal employees are in operation in 81 percent—or 858—of the nation's cities of more than 10,000 population, the International City Managers' Association reports. Forty-five of the communities joined the list this year, though most of the 45 adopted their plans in 1944.

The municipal pension systems are of two types: all classes of employees are covered in the first type, in operation in 379—or 36.7 percent—of the cities with retirement systems; only part of the employees are covered in the second type, in operation in 479 of the cities.

Slightly more than two-thirds of the latter cities provide coverage for fire and police employees only.

Minimum and compulsory retirement ages applying to municipal or general employees (other than police and firemen) of 360 cities reporting this information vary to some degree, according to the association's report, prepared for the 1945 Municipal Year Book.

The minimum retirement age in three-fourths of the 360 cities is 60 years; 43 cities have a minimum retirement age of 55, 30 cities fix the minimum at 65, and the remaining cities have various minimums ranging from 50 in two cities to no specified age in 17 communities.

Seventy years is the compulsory retirement age in about three-fourths—253—of the cities, with 43 cities fixing the retirement age at 65, and 61 cities having no compulsory retirement age.

In cities having retirement plans applying only to police or firemen or both, the minimum retirement age ranges from 50 to 65 years. Of the 182 cities reporting this information, however, 54 percent have no minimum retirement age. Likewise, 67 percent of the 289 cities reporting on compulsory retirement age have no compulsory retirement age; of the remaining cities 44 require retirement at 65, 19 at 60, 19 at 70, and the remaining between 55 and 66.

See also THE AMERICAN CITY, April 1945, page 95.

Dam Impounds Water of Poudre River

The Milton Seaman Dam, constructed in spite of many difficulties, now provides an adequate water supply for Greeley, Colo., where rainfall averages only 12.97 inches yearly.

By R. E. SEAMAN & C. G. KLEIN
Water Superintendent Clerk
Greeley, Colo.

TO understand the need for a storage reservoir for the city of Greeley is to understand the city itself, the territory it serves, and the way it must render this service. Water supply in the arid West involves more than mere health and sanitation, it involves the very existence of the community.

Greeley's 16,000 people are situated in the midst of a large irrigated belt that extends along the eastern slope of the Rocky Mountains. Rainfall here is scant, averaging only 12.97 inches annually for the past 54 years, consequently we catch as much of this rainfall as we can, storing it in numerous lakes and reservoirs, and regulating this supply to our needs. We knew of water rationing long before this war started.

Water Scarce

This scant supply does a yeoman's duty in our community. Out of this water so stored, we serve not only our own people, but also our neighboring town, Windsor, the farming community of Timnath, two sugar beet refining plants, a food dehydrating plant, a canning factory, two railroads, a flour mill, a prisoner-of-war camp of some 3,000 individuals, and four independent pipeline companies. Altogether, there probably are close to 25,000 people dependent upon Greeley's water supply—not a great number as cities go, but large enough for a territory such as ours.

Back in 1908 the city turned to the mountain river of Cache la Poudre to furnish a supply for its domestic needs. This early water works consisted of an intake, one sedimentation basin of 30 mg capacity, two slow sand filters, and a 20-inch wood stave pipeline connecting the river with the city and covering a distance of some 42 miles. This system gradually grew as the demand increased until it now can store some 100 mg—still a modest amount considering the demands that exist.

In the past, the city has had several periods of extreme water shortage, caused by diminishing river flow in drought seasons and dry winter months. This sole source of water supply fluctuates between 3,000 and 5,000 second feet in spring and early summer and drops to a minimum of 10 second feet or less in winter months. This scant and variable flow, coupled with the light precipitation in the region, emphasized the dire need of further development that would assure an adequate year-round water supply.

The first step was the construction of a diversion tunnel to take care of the flow while the dam was being built.

Early in 1940, our city officials, together with L. L. Stimson, County Engineer, made a study of various sites for a dam and selected the present site as the most suitable. The location is five miles above the present intake on a tributary to the Poudre River. This site is in a natural narrows of the stream bed and has a good granite base with sides well adapted to the construction of an earthen-fill dam. There was also a natural saddle in the mountain ridge a short distance east of the dam that was exceptionally well located to be used as a spillway.

Extensive tests were made by John Vanderwilt, geologist, of Denver, and the examinations of earth and rock samples proved that the aggregate to be used was of proper consistency and strength for the dam and for the construction of an outlet tunnel immediately east of the dam.

WPA Helps Build a Dam

In the fall of 1940, the Works Progress Administration approached the city of Greeley regarding the possibility of establishing a major works project to employ several hundred men in the community. The arrangement worked out between WPA and the city was for WPA to furnish necessary truck drivers, tunnel men, general workmen, camp maintenance, food, supplies, and a portion of the dynamite and cement required, and for the city to furnish the balance of material needed, as well as trucks, equipment, skilled men, and supervisors.

The project required considerable preliminary work. The first task was to construct about two miles of dirt road from the adjacent Fort Collins water works to the dam location. Upon completion of this, work was started on a camp to house the employees. This camp was of wood construction and of sufficient size to ac-

commodate over 250. Several men's sleeping quarters were erected. Hospital facilities were provided, plus a camp water supply, a light plant and an office building, storage structures for camp material, and a restaurant completely equipped to serve 75 men at one time.

Diversion Built

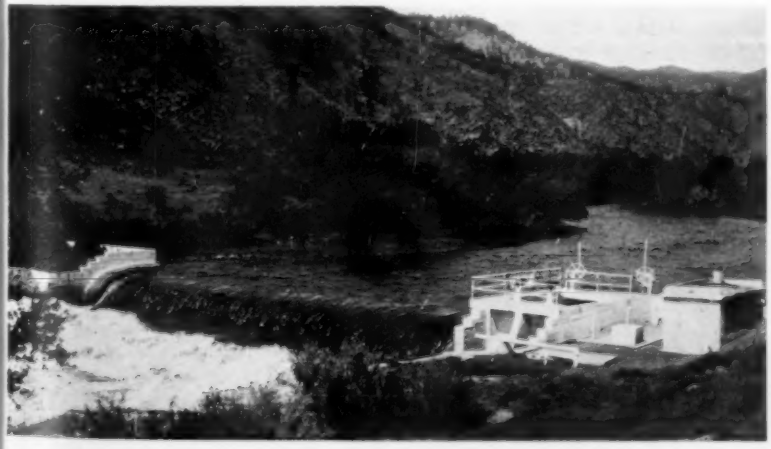
The first step, of course, was to build the diversion tunnel. It was horseshoe shape, roughly 18 feet in diameter. Work began in December 1940, and progressed very nicely with two and sometimes three shifts of men at work using a Sullivan air compressor and air receiver tanks and drifters along with 40 percent Hercomite dynamite for drilling. Fortunately, it was unnecessary to crib or brace any portion of the bore. Solid rock with exceptionally few fissures was found throughout the operation.

With the work on the tunnel complete, the next task was to construct a coffer dam, divert the water through the tunnel and begin work on the dam proper. For a secure base, we cut a core trench 5 feet deep and 20 feet wide in bed rock across the entire dam base extending it up the sides. Keyed into this base we placed an impervious clay core 105 feet thick at the bottom, tapering to 10 feet in thickness at the top with the construction brought up at a ½:1 gradient, requiring 65,000 yards of material. After bringing the impervious section up about five feet we began the semi-pervious sections which required about 95,000 yards of material. The maximum thickness of the semi-pervious material was 350 feet. Over this semi-pervious layer was placed the pervious or rock section which was 3 feet in thickness at the top of the dam and 10 feet in thickness at the base on the downstream side. It was made 25 feet thick at the base on the upstream side of the dam to give added strength. The impervious and semi-pervious sections of the dam were brought up in 8-inch layers, each type of material being carefully selected and graded, spread evenly, thoroughly moistened, and packed in place with a sheepfoot roller. Where the fill came in contact with the rock wall, it was well compacted with air hammers. The rock face has a 2:1 slope on the downstream side of the dam, and a 3:1 slope on the upstream face. The various layers are brought up to a 26-foot crest which is 112 feet above the foundation. This height allows a 12-foot freeboard plus a 4-foot concrete parapet wall four feet thick at the base.

After the dam was well along, a part of the crew started work on the spillway. The spillway is 100 feet wide and 308 feet long. The maximum cut made was 73 feet in depth. Approximately 50,000 yards of rock and loose material were removed from the spillway and used for riprap and dam construction. Hydraulic studies show that the spillway is large enough to handle 18,000 second feet of water at a depth of eight feet. The depth from the base of the gates on the riverbed to the spillway is 72 feet.

Before the dam fill was completed, war had been declared, with a resultant decline in the number of workers. Shortly thereafter the Works Progress Administration withdrew from the dam project as men were no longer available. Work was continued on a small scale until the fall of 1942, when the city of Greeley was able to secure the assistance of a conscientious objectors' camp that is located about six miles from the dam. The camp was able to place an average of twenty-five men on the job.

This promentory formed a key point in the dam. The left side was used for the spillway, the right side formed the end of the dam, and the intake was located in the center.



The diversion dam or spillway

Gates and Control House

When the installation of gates started, it was necessary to widen the mouth of the tunnel considerably, and it also required the removal of considerable rock to prepare the face of the tunnel. Forms were built for the footing of the gates and for the spillway. Also, the pillars for the base of the trask rack were started. This work constituted the first pour with the Pumpcrete machine that had been purchased for that purpose. Then the pilasters and continuation of trash rack structures were formed in two

subsequent pours. As there are four gates four by six feet in size and one gate in the center three feet square, it was necessary to construct four pilasters, two of them 2½ feet wide by 15 feet 3 inches long by 21 feet high, and the other two, 2 feet wide by 19 feet long and 21 feet high. These also supported a base for the four large oil cylinders, each 3 feet by 7 feet in height. The small service gate has a small cylinder 2¾ feet by 4 feet. The gates are of close-grained cast iron with gate guides and frames of phosphor bronze and gate stems of steel, manufactured by the Mueller Company of Chattanooga, Tenn.

Control Equipment

The control house for the gates is situated on the downstream side of the dam. It houses the large oil storage tank and has two gasoline operated pumps for actuating the gates. Two emergency hand pumps are also connected, to serve in case both power driven pumps should fail.

Oil control lines are attached to the roof of the tunnel by cinch anchors. These hangars are also used to support a 15-inch jointed air pipe that extends from a point directly above the spillway to the lower end of the tunnel outlet.

A noteworthy feature of the gate opening is the trash rack structure protecting the gates themselves. The frame of the trash rack is composed of formed concrete and steel pillars joined with concrete connecting sections on three levels. The trash rack gratings are attached to pillars forming a large square enclosure above and on the sides of the gate openings as well as in front.

Drainage Area

The reservoir has a runoff from a drainage area of over 200 square miles of mountainous terrain and has a capacity in excess of 6,000 acre feet.

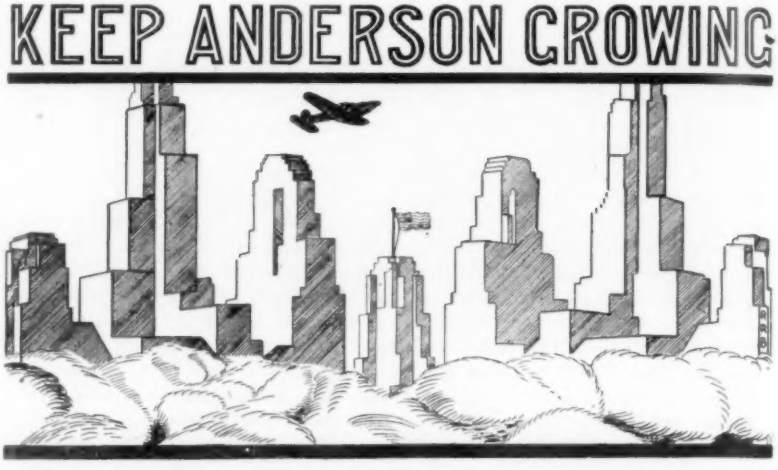
We wish to express our thanks to M. C. Hinderlider, State Engineer for Colorado, for the time and advice he has most generously given during the time this dam has been under construction. With his assistance the Water Department has been able to complete this project in these very difficult years. Able assistance was also given by Ralph Cottingham, engineer for the New Cache la Poudre Irrigation Company of Greeley. John Fields of Denver also ably supported the State Engineer's office in the capacity of inspector. Heavy construction equipment was leased from the Edward Selander Construction Company.

City Official Gets Newspaper Aid in Stimulating Citizen Interest

MANY a city official has often wished for some effective way in which to tell the residents of his community about civic activities, particularly when some worthwhile project had been proposed and has needed backing. The city officials of Anderson, Ind., feel that they have found just such an effective means of publicizing Anderson's many and varied activities. Since October 1944 they have been publishing a weekly column, "Keep Anderson Growing," in the local paper, *The Anderson Herald*.

Anderson's officials are enthusiastic about the results of this column. It is stimulating civic interest and pride more effectively than has any other method so far employed. R. R. Baxter, energetic Superintendent of the Anderson Sewage Treatment Plant, who writes the column, believes that if the benefits of such a column were known similar ones would be appearing all over the United States.

Local newspapers the country over are more than anxious to further the interests of the communities they serve and should be interested in an idea such as this. If the column is as intelligently conceived and executed as the one in Anderson, it should be an outstanding force to keep a city abreast of the times.



Anderson, a growing, thriving, and financially sound city, offers wonderful possibilities to industrialists, merchants and construction contractors. The Post-War Planning Commission appointed by the Mayor is working on the problems of providing adequate facilities to take care of the rapid growth and expansion of the city. Industrialists, merchants and construction contractors who are planning projects for post-war expansion should be working hand in hand with the Mayor's Post-War Planning Commission for mutual benefit. It is believed that no city in the State of Indiana will have more to offer than Anderson.

In all probability the time for post-war planning is more than three-fourths gone. When the break comes, those who have worked out their plans and are ready with a definite layout of their projects, whatever they may be, will be the ones in the best position to succeed.

When post-war planning was first talked of, it was surprising to see the widespread interest but as time goes on enthusiasm lessens at the very time when the plans should be nearing completion. There has been a great deal of talking about many projects that should be undertaken in the post-war era, but just how many of the projects are out of the talking stage is a question. The more plans that are BLUE-PRINTED NOW, the shorter the reconversion period will be. If sufficient work is not planned and fully arranged for now, we may have a period of unemployment, then a period of hasty planning with rather poor results as compared with previously well thought out plans. Those of us on the home front have a gigantic task ahead of us. Every village, town and city has its own problems which they should work out for themselves without federal aid. Certainly none of us care ever to see a repetition of the Works Progress Administration days.

Let us plan to have the worthwhile jobs ready and make sure we get something for the money and labor expended during the reconversion period. There are plenty of projects that are worth while doing and eventually there will be plenty of labor and material available. Our job now is to do everything possible in working out the plans of the different projects and to provide the money.

A specimen column of the Anderson newspaper series.

Graphic Presentation Comes of Age

By PHILLIPS BRADLEY

THE announcement by the American Institute of Graphic Arts of its first annual and national exhibition of town and city reports is at once a boost and a challenge to every City Hall in the country. The Institute's record in improving typography and format in the publishing world is outstanding. Its annual traveling exhibit of the "Fifty Best Books" is nationally known and generally recognized as a major factor in improving American printing and design.

A Boost to Better Reporting

The Institute has now turned to the field of municipal reporting—with the same purpose of giving recognition to the best graphic presentations of City Hall's business to the citizen. Here is undoubtedly the most important nationwide boost to better reporting that has occurred in this country or this century. By lending its prestige and competence, the Institute is giving most welcome and effective support to the already well-organized movement for the more graphic presentation of City Hall's operations to the people.* It becomes, in effect, both a national clearing-house for better reporting techniques and a primary force in promoting the use of these techniques.

The Institute's call for the submission of reports has already gone out to many municipal officers and associations. The exhibition will open in New York City late in September, 1945. It will then go on tour to City Halls, public libraries, schools, colleges, and universities, and municipal and civic associations. The exhibition will be made available to communities throughout the country. Thereby, the Institute will do much to stimulate interest in the uses to which graphic presentation can be put for greater awareness by the citizen of the work and achievements of *his* City Hall.

A Challenge to Better Reporting

The Institute's exhibition is also a challenge to all municipal officials to improve their reporting. In this first annual exhibition, a wide variety of reports—from the graphic standpoint—will no doubt be submitted. From them will be culled those which the judges consider best exemplify the highest standards of design, format, and graphic illustration. To have produced the reports selected for the exhibition will be a feather in the cap of the City Halls producing them. There is every reason to expect that competition will be keen this year—and grow keener year by year.

How the Institute Is Organizing the Exhibition

The Institute has organized a national advisory committee which will be primarily responsible for the policy and management of the exhibition. Its own committee, composed of Institute members, is headed by Brad Stephens of Boston, editor of *Direct Advertising* and owner of a well-known printing house. The advisory committee includes recognized experts in the field of municipal reporting.

The Town and City Reports Committee has already developed the broad outlines of the exhibition's standards and organization. *Every* City Hall in the country is eligible to participate. Reports will be judged in six population groups: up to 2,500; 2,500-10,000; 10,000-50,000; 50,000-200,000; 200,000-500,000; over 500,000. Not only general municipal reports but departmental annual and special reports (e.g., school departments, libraries, public works departments, etc.) may be submitted. Separate classes will be established for general and departmental reports in the various population groups.

The fact that the exhibition will include—and recognize—our smallest towns as well as our largest cities is one of its most valuable and encouraging features. Smaller communities may not have the opportunity to expand their report to the scope and format of a large city. They can, however, do as useful a reporting job: even though it is not printed but processed a report will not be debarred from consideration. That a number of our towns and smaller cities are today doing some of the most effective reporting from the graphic point of view is too well known to need reemphasis here. This exhibition may, indeed, serve to underline the fact, which those working in this field know, that the community's size is no index to the quality of its reporting.

How Reports Will Be Judged

The AIGA's Town and City Reports Committee has already announced its general criteria for judging the reports. Five factors and a sixth over-all requirement are included, as follows:

(a) General format, appearance and workmanship.

(b) The number and quality of charts, symbols, maps and tables.

(c) The beauty and significance of photographs, drawings and illustrative designs used.

(d) The color and variety of presentation.

(e) The general design of the report, and its success in meeting its intended purpose of presenting a clear and accurate account to the citizen.

The over-all consideration which will govern selection has been stated by the Committee thus: "Although the selections will be made primarily on the basis of the physical standards listed above, no report will be selected which fails to present an adequate view of

* Statewide "competitions" for the best municipal reports, such as those in Massachusetts (sponsored by the Massachusetts Selectmen's Association) and Vermont (sponsored by the Vermont State Chamber of Commerce), have already contributed much to better municipal reporting. To give national recognition and coherence to these efforts is a major advance and of mutual advantage to these and similar groups.

Public Management and THE AMERICAN CITY have both given repeated publicity in recent years to improved methods of municipal reporting.

LET THE BIG BOY DO THE JOB

From Litchfield, Conn., "Report to the Voters' Club"

the municipality's or agency's financial operations for the year."

These criteria demonstrate the Committee's—and the Institute's—recognition of the basic purposes of municipal reporting: "presenting a clear and accurate account to the citizen" and "an adequate view . . . of financial operations for the year." At the same time, the idea behind the exhibition is a vital and, indeed, indispensable aid to the achievement of these purposes. By making the account more intelligible and readable, through better format and graphic illustration, the major objective, reporting to the citizen, will be better attained.

What to Do

Reports, to be eligible, must be printed before June 1, 1945, and must contain no advertising matter. Four copies should be sent prepared to:

Town and City Reports Committee,
American Institute of Graphic Arts,
115 E. 40th St., New York 16, N. Y.

before July 1, with an indication of the 1940 population of the town or city.

It is obvious that the value and success of this first national exhibition depends on the response of municipal officials throughout the country. The earliest possible submission will be the best assurance possible that our towns and cities are on the way towards an era of better reporting. Better graphic illustration, as a visual and visible bulwark of more democratic local government through wider citizen-interest, is one of the best investments in local post-war reconstruction.

Planning and Timing Public Works

Recommendations, of Nation-wide Applicability, from the State Reconstruction and Reemployment Commission of California

THE construction industry has gone to war. It cannot convert to large-scale peacetime operations all at once. Contractors' organizations have been broken up and their foremen and skilled workers scattered. Much of the construction equipment will be worn out or obsolete. Many building materials will be scarce until the factories can turn them out in quantity.

Construction is notoriously a feast or famine industry, hiring thousands of additional workers during boom periods and laying them off as soon as the boom collapses. These sudden and large fluctuations of employment in the construction industry have been a contributing factor in cyclical depressions. Increasing the stability of construction employment through better coordination of public works with private construction will be needed more than ever in the post-war period. The danger of a runaway building spiral with rapidly rising construction costs and subsequent deflation, such as occurred during 1919 and 1920, can be lessened by proper timing of post-war public works.

If private building revives on a large scale immediately after the war, public construction should be carefully timed to avoid raising costs and creating bottlenecks in the flow of materials, equipment and skilled labor to private work.

Essential Public Needs

However, some certain types of post-war public construction are as urgently needed as private building. Many public facilities are overloaded almost to the danger point. Deferred maintenance and repairs for streets and highways, water supplies, and sewage systems are so badly needed in certain communities that they cannot be much longer postponed. Hazardous conditions in state institutions, which have been tolerated only because of the war, must be quickly corrected. In addition, a certain amount of new public construction will be required immediately to provide for the larger population.

If builders or property owners are hesitant and private construction is slow in getting under way, well-planned programs of public works will then be doubly needed, not only to provide urgent replacements and additions to physical plants, but also to stimulate employment. There will be many communities in which private building will be slow in getting started and where there may be large numbers of unemployed workers and returning

service men. In such areas, public works programs ready to go will be not merely desirable, but highly important. Highway projects will be particularly useful if plans, specifications, and rights-of-way have been previously acquired, because they can put more men on the job in less time and provide more on-site labor per dollar of cost than other types of public works.

Surplus Federal Equipment

The federal government will soon begin to dispose of an enormous quantity of surplus construction materials and construction equipment. Millions of dollars worth of these surplus materials and equipment are stored in warehouses in California and will undoubtedly be sold by the federal government to bidders in this state. A large part of these surplus materials and equipment will undoubtedly be of standard sizes and capacities that will make them immediately useful for public and private construction in California. Their early availability should be an important factor in enabling needed construction to be started quickly without having to wait for manufacture and delivery of such materials and equipment from other parts of the country. The extent to which these surplus materials and equipment can be used will, of course, be determined by details of working plans and specifications.

It is suggested that the State Department of Public Works and the State Architect's Office investigate the particular types of surplus materials and construction equipment that will probably be disposed of by the federal government in California and endeavor to adjust, where practicable, working plans and specifications for state projects, so that such surplus materials can be used in building urgently needed improvements. The purpose of this suggestion is to expedite construction of urgently needed state projects through minor modification of the plans and specifications that will permit the use of commercial sizes of construction materials, such as pipe, sheet metal, hardware, rough and finished lumber, plumbing fixtures, and similar items, that will probably be disposed of as surplus by the federal government in California.

Geographical Correlation

Effective planning of post-war public works involves not only the careful selection of needed projects as part of broad plans for development of the state and its communities and not only the proper *timing* of construction in relation to unemployment, but also the proper *geographical* correlation of the work with pools of unemployed workers. For local projects these duties are primarily the responsibilities of local officials and local planning agencies. They are duties which can be fulfilled only by frequent exchanges of information, and by close working relationships between local business and local government. They require adequate, current information on what is happening in various areas of the state and the courage, willingness, and ability to act quickly to meet changed conditions. It is, therefore, highly important that working plans be ready, that sites and rights-of-way be acquired and that construction funds be available on short notice. Additional funds are urgently needed for *continuous* advance planning of post-war public works on all levels of government.

The whole subject of timing, distribution, and scheduling of public works programs to aid employment requires thorough study. The Commission has recommended that the Legislature authorize it to engage upon a continuous study of the timing, distribution by areas, sequence of operations, and other factors which may affect the usefulness of public works as a supplement to private employment in the state; to furnish special information to public agencies and officials of the federal, state and local governments, and to advise and confer with such public agencies and officials concerning the timing and coordination of public works and public service projects in California.

Development of a Statewide Program

Further steps required for an effective statewide program of post-war public works are summarized in this California report as follows:

1. Completion of working plans and arrangements for the financing for those state and local projects which are obviously urgently needed and which must be built as soon as manpower, materials, and equipment become available.

2. Early initiation of further studies of the ability of the state and of local public bodies to finance future capital improvements. These studies should include explorations of possible new sources of funds and revenues.

3. Acceleration of planning for the physical development of the state and its communities so that future public works may be correlated with overall development plans, programmed in best sequence, and properly timed for construction. This is essential if the projects are to fill the most important needs for physical improvements and return maximum benefits from such expenditures of public funds.

Recreation Marches on in San Diego

THE fruits of long time planning for public recreation and of enthusiastic effort year by year to carry out these plans appear at San Diego, Calif. Last year over a million persons found pleasure and relaxation in 51 separate playground areas operated by the Playground and Recreation Department. The year's program included almost every type of sport and craft activity. By the handicraft and hobby groups alone, over 32 tons of waste materials were collected and utilized, producing 7,607 articles at 42 different playgrounds.

Forty percent of the participants engaged in such sports as tennis, softball, swimming; 15 percent in story, dance, and dramatic classes; 25 percent in handicrafts; 10 per cent in individual sports; and 10 percent in supervised play. Participants in San Diego's recreational facilities include citizens of all ages.

In 1944, recreational programs were organized by the Playground and Recreation Department in 12 federal public housing project centers. For this the federal government contributed $8,365 for the employment of an average of 20 full- and part-time employees for these projects.

San Diego's facilities are directed particularly toward the neighborhood, and during the past ten years four recreational buildings have been completed, and other improvements have been carried on with order and vision. The city now has under consideration a plan whereby all recreational activities, not only of the Playground Department but those at city parks and beaches, will be placed under the direction of the Playground Director.

A Modern Sewage Treatment Plant to the Rescue

Attractive main building of Lompoc, California's new sewage treatment plant. Just left of this building is one of the filters.

Lompoc, Calif., builds a modern bio-filtration plant to replace a badly overloaded Imhoff tank and eliminates dangerous pollution of a nearby water supply

By E. A. VAUGHAN
Manager, Light and Water Dept.
Lompoc, Calif.

THE old saying that "Growth compels progress" has been particularly true in the case of Lompoc. After the war began, our population grew in three short months from 3,500 to 10,000—almost a threefold rise—and compelled us to abandon the use of our old Imhoff tank in favor of complete sewage treatment.

The situation developed in this way—

In 1941 and 1942 the Army constructed Camp Cook adjacent to our city with a capacity of two full armored divisions. A part of the attendant civilian population flowed into Lompoc and all our sanitary facilities were "bursting at their seams." Particularly was this true of our Imhoff tank which, designed for a population of 1,500, was, even before the war, treating sewage for a connected population of 3,500. With an increase of almost three times that number the tank was seriously overloaded. This created a really dangerous situation since the effluent from our plant was discharged into the Santa Ynez River about 150 feet upstream from the nearest well of Camp Cook's water supply system. This effluent, particularly during the dry season, percolates to the underground strata which supply this well and, therefore, subjects this source of water supply to a gross pollutional load.

The primary filter is under construction. Filter blocks are being laid at the right. The shaft, which will be the pivotal point for the Dorr distributor, is at the left and the sidewalls of the unit may be seen beyond.

This Parshall flume is connected to a Bristol meter which registers the amount of sewage entering the plant. To the right of the flume is the chlorinating contact chamber.

With conditions in such a state it was not difficult for us to obain the necessary WPB priorities and a grant of Lanham Act funds from the Federal Works Agency to start construction of a modern sewage treatment plant.

In May of 1942 construction of the plant was begun, but during the critical period of late 1942 and 1943 the job was closed down because of inability to obtain some of the equipment. However, after much effort we obtained the needed equipment and con-

struction proceeded. The plant was completed February 9, 1944, and went into operation immediately.

Description of Plant

Our new plant is of the bio-filtration type designed for an average flow of 400,000 gpd. It incorporates a method of treatment developed by Harry N. Jenks of Palo Alto, Calif.

The sewage, averaging 350,000 gpd at present, enters the plant through a Parshall flume equipped with a float actuated Bristol meter which indicates the rate of flow to the plant. After chlorination the sewage enters the grit chamber where the heavy inorganic materials settle out. The sewage is then pumped through the plant by four electrically driven Fairbanks-Morse pumps. After leaving the grit chamber, the sewage goes to the primary clarifier which has a 40-foot diameter and an 8-foot side water depth. In this unit a high percentage of the suspended solids settle and, together with the floating scum, are collected into a hopper from which they are pumped by two Fairbanks-Morse 100-gpm sludge pumps to the primary digester. The effluent from the clarifier goes to the primary bio-filter, a unit 65 feet in diameter with a 3-foot rock depth (rock size 2 to 3½ inches) and equipped with a rotary distributor. The plant is designed to provide for the recirculation of 1,000 gpm of the effluent through these two units. The flow then proceeds to the secondary bio-filter and thence to the secondary clarifier. In these secondary units the design provides for the recirculation of 666 gpm of the effluent. The clarifier and filter distributors were supplied by The Dorr Company.

Chlorination

After leaving the final clarifier the effluent is chlorinated in a chlorine contact tank with a dose sufficient to maintain a residual of .5 ppm. It is then discharged into the Santa Ynez River bottom.

The plant uses the two-stage digestion process. Gas is collected in the dome of the two units and is used to fire the boiler that furnishes heat to the digester units through hot water coils. A temperature of from 87 to 90 degrees is maintained in the digesters.

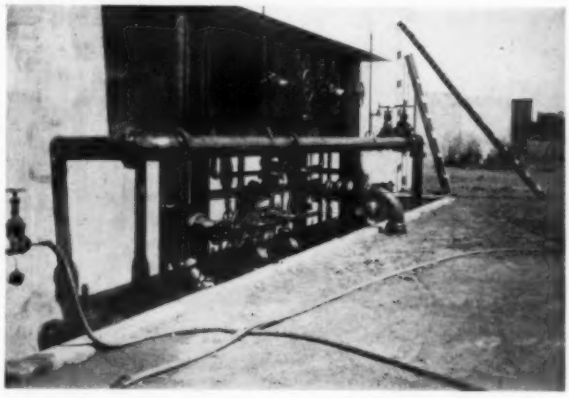
BOD removals average 94 percent and suspended solids 90 percent.

Digested sludge is dried in open drying beds and is sold as a fertilizer to farmers who produce flower and vegetable seeds.

The cost of the plant and a 3,300-foot outfall line was $144,000. This sum was furnished from Lanham Act funds by the Federal Works Agency which now leases these facilities to us. After the war we expect to work out arrangements with the Government for the purchase of the plant. Since it went into operation we have invested approximately $3,000 for equipment.

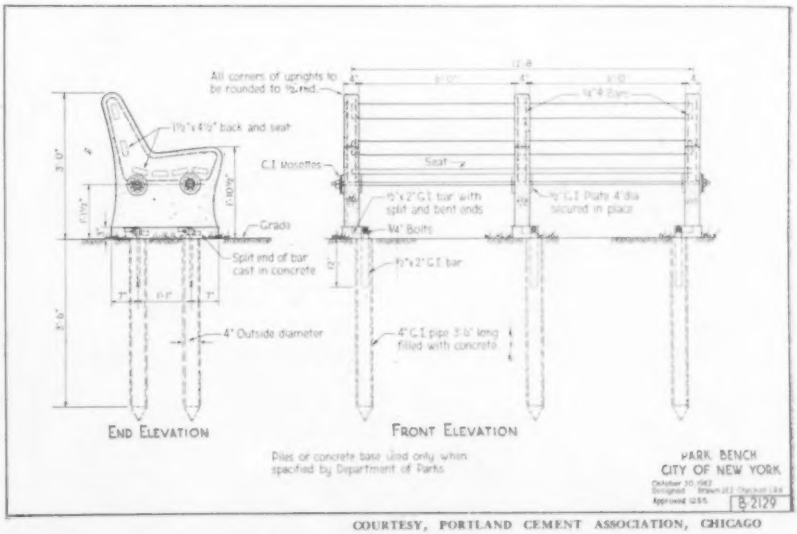
The plant was designed by Leeds, Hill, Barnard and Jewett of Los Angeles. H. A. Teget of Ontario, Calif., was the Contractor. The Federal Works Agency was represented by Regional Director Wright L. Felt and by Project Engineers H. M. Hunt, Charles Sevier, R. F. Sauter, and A. J. Elliott.

RIGHT: *The secondary filter, now complete and in operation, is a duplicate of the primary filter, which is shown under construction on the opposite page. The distributors were furnished by the Dorr Co.*



LEFT: *In sunny California all the control and piping arrangements for the digester units are located outside the building.*

Park Benches for New York City


All corners of uprights to be rounded to ½-rad.
1½"x 4½" back and seat
C.I. rosettes
Seat
Grade
Split end of bar cast in concrete
4" Outside diameter
¾" Bolts
¾"x2" G.I. bar
4" G.I. pipe 3'-0" long filled with concrete
END ELEVATION
FRONT ELEVATION
Piles or concrete base used only when specified by Department of Parks
PARK BENCH
CITY OF NEW YORK
B-2129

COURTESY, PORTLAND CEMENT ASSOCIATION, CHICAGO

This plan is used in constructing park benches for New York City

Locate Airports for 100 Years

By WILLIAM T. PIPER
President, Piper Aircraft Corp.
Lock Haven, Pa.

JUST what is a properly located airport? A good location under certain conditions is entirely wrong under others. It is certain that an air terminal—although a necessity for a large city—is not suitable for a small town. These large fields cost so much to build and their maintenance is so high that only a few cities can afford to have them. The journeys commonly made from such fields are so long that the distance to the airport from the heart of the city is relatively unimportant. On the other hand, the trips made with personal planes are so short that the distance to the airport is most important. Cities like New York should be entirely surrounded by small fields in addition to having them scattered around the city. Over one-quarter of the city is now given over to automobiles and pedestrians and in all fairness, some fields should be built for personal planes. Where the land is available, two or more runways should be provided. In other places an air park or, if need be, a single landing strip could be used.

What for the Future?

Forty years ago when there were few automobiles, I worked on a concrete garage for privately owned cars. It was located in the center of the residential district of New York less than a block west of Central Park. The proposition seemed to many to be entirely unsound but the building has been full of cars from the day of completion. I expect to see some so-called "crazy man" build a large hangar with a flat roof for a landing field. The plane will be taken down an elevator or ramp for storage and the passengers will take an elevator to a rapid transit station. Such a building would not cost more than some of today's airports and could have the advantage of being conveniently located. When such a facility is available, planes will be useful for commuting and there will be some real activity in this field.

Aviation is just another form of transportation which will not replace but merely supplement other ways of traveling. If it is to grow and prosper, it cannot have too much sponsorship, but must pay its own way by effecting economies in time, cost, or comfort and convenience. If personal planes are to be as numerous as we all expect them to be, they must have increased utility. A trip from one large city to a small one or from one village to another can often be made best in a personal plane. If the trip is very short, it is best to make it entirely by automobile. The Biblical saying might well be changed to "What does it profit the pilot if he gains a whole hour in the air and loses two on the ground." Yes, if planes are to be satisfactorily used for short journeys, the airports must be properly located.

Before the war we had nearly 25,000 licensed planes of which less than 400 were used on airlines. A few companies and wealthy individuals, also, had large planes but there were few if any that could be called feeder line or freight planes. Practically all others used by private owners and operators for training, passenger hops, non-scheduled trips, etc., can be classed as personal planes. Of course, the war has changed all this. We now have hundreds of freight, hospital, and passenger planes in the Armed Services, but after the war ends, we will doubtlessly return to approximately the same percentage or ratio of airliners to personal aircraft as before the war.

We can now go to nearly every home in the United States on a good road. To make this same thing possible by airplane, only an occasional narrow strip along the highway is required. No one can tell when a flier will wish to visit some crossroad hamlet. The highways stretch for miles in four directions to the next settlements. Certainly a landing strip at such places can be afforded if paved roads at about $50,000 per mile are a good investment.

Personal Plane Facilities at Air Terminals

In the case of large cities with air terminals, a small section of the field should certainly be alloted to personal planes. When starting on long trips, how much quicker, simpler, and cheaper it would be for passengers to fly to the airport from surrounding towns than to go to the city by train and then taxi to the field.

Large cities will naturally have neighborhood fields but the medium-sized cities without airline service should, also, have several. Much time can be saved if there is a small community field in each quarter of the city so that pilots will always drive out to the airport rather than cross heavy downtown traffic.

Farmers—Logical Owners

Farmers above all others are the logical owners of personal airplanes. At practically no expense they can have their own landing field with a hangar only a few yards from the house. When the frost is going out of the ground and the roads are impassable, they can walk to their plane and make a quick trip to town by air, thereby saving many hours. The same thing is true in the winter when snowdrifts block the highways. Another fine example of utility due to properly located landing facilities is commuting to within walking distance of the business district. Land planes are easily equipped with floats and good amphibians are available. Most cities are on streams and if the water is not deep enough to operate in, a dam can be built which will furnish plenty of landing area.

There is a great temptation to get a field miles out in the country where the price per acre is low. Activity at the airport will increase and it takes but little imagination to visualize hundreds of cars making the round trip daily. The total cost of this extra driving in gasoline, to say nothing of time, will pay the increased cost of a closer airport manyfold. Remember, we are building for the future! The fields we select now may be used by many generations of pilots, so let's see that they are properly located!

Information Service on Child Welfare

Child Welfare Information Service, Inc., has been organized at the nation's capital by more than thirty national organizations for the purpose of disseminating information on federal legislation affecting the health, education, employment and general welfare of children and adolescents. An office has been opened at 930 F Street, NW, Washington 4, D. C., with Bernard Locker as Executive Director. Mrs. Eugene Meyer of *The Washington Post* is President.

The new organization will issue bulletins analyzing all bills introduced into Congress concerned with the protection of childhood as well as important changes in administrative policies in the federal bureaus.

Business Machines in a Public Library

Save space and time of public and staff and in effect make the library larger

By MARGERY QUIGLEY
Librarian, Montclair Public Library
Montclair, N. J.

PUNCHED card machine methods, used for so many municipal accounting operations, have begun to penetrate the library field, with several public libraries applying them to limited areas of their work. The Montclair Library, in Montclair, N. J., has boldly adopted them for all records of books borrowed and returned, as well as for records of purchases and monthly statistics.

As soon as war priorities are lifted, it is probable that many up-and-doing municipalities will adopt punch-machine systems for their public libraries, either independently or in collaboration with other municipal departments. Consequently, conditions and facts demonstrated at the Montclair Library are coming up and will increasingly come up for discussion in forward-looking towns. For this reason we present a few of the most interesting ideas brought to light in connection with the system as it is now working in Montclair.

The matter of comparative expense between former systems and the new system will await longer experimentation. Present indications point to little difference in net cost between the old systems and the new.

A difference in types of personnel employed is indicated. The new system decreases the number of professional workers needed, as most of the routine work formerly (uneconomically) carried on by professionals can now be assigned to those capable of manual work with light responsibility attached. Indirectly this permits and encourages improvement in the caliber and pay checks of the reduced number of professionals still needed.

One of the important advantages of the punch-machine system for libraries is that it takes certain files of cards, and the work connected with them, from expensive and often urgently needed public areas of the building to less expensive work areas behind the scenes. The punch-machine system requires only one small control machine, about the size of a typewriter, at the desk where the public charges its books. An electric cable

PHOTOGRAPH, COURTESY INTERNATIONAL BUSINESS MACHINES CORP., N. Y.

The control machine attendant is placing in the machine, side by side, the book card with her left hand, and the borrower's card with her right.

connects this machine with the work room where all filing, sorting, counting, and preparation of overdue notices are carried on. This relieves the public area of the building of personnel, files and most routine operations involved in this aspect of library work. It also promotes a friendly atmosphere at the charging desk, where routines no longer predominate. Certain intangible gains, therefore, result from this change.

Public areas of public buildings are comparatively expensive, as against work areas occupied by the staff only. Some of the factors which make them so are their relatively high supervisory or policing costs; the relatively large traffic and air space needed around each public activity nucleus; the relatively high heating cost (due to coming and going from the out-of-doors, and to the higher ceilinged rooms necessitated by denser occupancy); and comparatively high furnishings and upkeep costs, including heavier cleaning requirements and more frequent redecorating.

More often than not, public sections of library buildings are built two or more stories in height, in order to provide proper cubic air, space, light, and lines of supervisory vision. This two-story or three-story space cannot economically be used for work which can be done equally well or even better behind the scenes in more compact and less expensively maintained areas. It is profitable, then, to relieve public areas of as many activities as can be advantageously carried on in work areas.

As a matter of fact, public space is at a premium in most active libraries. Competition for public space has become more and more keen as current publishing and information-seeking have increased with today's technical progress. Earlier library provisions are no longer adequate either for the collections of books or for assistance needed to administer them. More public space for reading and studying is needed. More space for displays and accessible shelves are required, and space for consultation with public and professionally trained workers is increasingly demanded. All these make business machines—and anything else which can shift routine work to positions behind the scenes—valuable.

A totally different efficiency angle on the use of the punched card machine system derives from the fact that

PHOTOGRAPHS, COURTESY INTERNATIONAL BUSINESS MACHINES CORP., N. Y.

The Work or Tabulating Room where, with the aid of five different machines, the sorting, counting, filing, and all clerical work connected with the records of books purchased and lent is carried on.

this modern method of handling library routines keeps each book and its card always together, reducing the time lag between return and re-issue of the book. In most library charging systems, the book card is kept at the library as a charge record while the book is out. When the book is returned, the borrower waits and a staff member hunts for the record. In some libraries no attempt is made to find the book card while the borrower waits. Books are laid aside and held until time permits searching for the cards. This system, while dispensing with the waste of the public's time, withdraws large numbers of books from use at busy periods, just when the demand is heaviest, meaning, of course, that more books must be owned, housed, catalogued, and cared for than in the more efficient system which keeps book and card together.

The punched card system can keep the book and its card always together because it provides for instantaneous duplication of the card for purposes of record. The basis of operation is a unique pattern of holes, including much descriptive data. When a book is borrowed, these two cards are for a moment placed side by side in the small control machine at the public desk. At the press of a button a charge card, which duplicates both the borrower's pattern and the book's pattern side by side, is mechanically produced —not at the public's charging desk, but back in the work room, at the other end of the electric cable. The book card then goes immediately back into the book pocket, where it is found ready when the book is returned to the library, eliminating any time waste, making the book immediately available to another borrower.

A third important asset of the punched card system is that it permits analysis of the use of the library. Upon such analysis, computed by machine, more efficient service and more closely adjusted buying can be based.

This analysis, which is in fact a form of marketing study, results from the fact that the punched holes in the borrowers' cards and the books' cards (and consequently in the records of borrowings, which reproduce book and borrower hole patterns side by side) have meaning. The holes in a borrower's card may, for instance, be placed so as to indicate by their position his age, education, occupation, race, color, residence area, marital status, or whatever data is desired. The positions of punched holes in the book card may record the book's date of publication, cost, subject, popular or technical level, and classification in other categories. By machine sorting and counting of cards a library may discover what parts of town or what age groups are being served most fully, what types of books are being borrowed most, what subjects are being read by groups differing in education level, occupational interests, or nationality. Also, data widely useful in publicizing the library's services and assets are obtained.

Originally this machine system for libraries was proposed primarily because of the advantages it offered in circulating books. Experience to date predicts that because punched records are susceptible to analyses, the research possibilities and studies for merchandising purposes may outweigh the assets originally contemplated.

Codes for School Buildings

Admits Safeguards Are Needed

STATE schoolbuilding codes are a straight-jacket that bind the architect hand and foot and prevent the American community from having the modern kind of school housing that it needs, says John E. Nichols of Hartford, Conn., member of the American Association of Architects and supervisor of school buildings and plans for the Connecticut State Department of Education, in the current issue of *Pencil Points*.

The regulatory code, built as it often is upon a concept of education and its physical needs now thoroughly discredited, tends actually to perpetrate mediocrity through procedures that are no longer adequate, according to Mr. Nichols. The ancient concept of the one-room schoolhouse has been perpetuated in a majority of the schoolhouses in use throughout the nation, he believes.

Mr. Nichols concedes the need of codes and argues for an informative rather than a regulatory type. His kind of code would contain practical background information on the objectives and philosophy of education. It would explain why such things as outdoor facilities and equipment are needed, describe them, and point out factors to be borne in mind when laying them out. If school authorities are to hope for the schoolbuildings they desire, they must place in the hands of the architect a "vision of the ideal" rather than merely lay down the minimum standards to which he must adhere. The truly informative code does not exist at present except here and there as a timid shadow, Mr. Nichols says. One is seriously needed to prevent mistakes outgrown.

Tabulating Robots Produce Letter Perfect City Payroll

Pay checks make the municipal mare go and the tabulators whip them out quickly with the necessary attendant records for employees and federal income tax requirements.

By PERRY W. RODMAN
City Comptroller
Bridgeport, Conn.

WHAT I have to say is perhaps old stuff to most municipal finance heads. It is my hope, however, that I can give a new twist to "how best to handle payrolls in a municipality." From 60 to 75 percent of a city or town budget comprises the item that makes the mare go —salaries and wages. Private industry as of today doesn't get excited about salaries and wages except when the WMC, WLB, or OPA steps on its toes. Contracts are made mostly with the government agencies directly or indirectly and salaries and wages are basic costs figured into the contract. After this item and a thousand others are added together the government says "o.k. boys, you can make so much money on top of that," so meeting payrolls when one is engaged in government war work is a minor item.

The urgency of watching the nickels in a city operation is greater during wartime than at any other time in a city's history. All the boys and girls that work for the city want to be blessed with the wartime scale of wages and it just isn't in the cards, because Uncle Sam doesn't say to the cities, "o.k. we'll help you pay the super wages." On the contrary, the federal government puts added difficulties in the way, such as providing for withholding, and no doubt in the near future provision for social security. Then, of course, there are numerous reports for which the payroll records form the basis. Putting together a payroll by hand would be a tough job even under the most comfortable circumstances, for a city having, say, some 2,600 employees. In wartimes it would require a "Houdini" to do it because you can't get help when you need it, and most of the time the help that you can get to replace those taken by the armed services, war work, or what have you, are not qualified. This is the high spot of the problem that faces any municipality. If an economical and efficient method can be worked out to conquer these problems in wartime, it is evident then that this economy and efficiency can be carried over into peace times, and are the smart things to do.

In addition to these difficulties with municipal payrolls, there are also, almost without exception, legal requirements to be met in the drawing of these payrolls. This is something that private industry, except in rare instances, doesn't have to worry about. In Bridgeport the payroll must be certified to by the department heads and passed by the Civil Service Personnel Officer and then authorized by the Comptroller. All of these steps are prescribed by law.

Bitter experience has taught some of us that the farther away we can keep from human error in preparing and processing payrolls, the better off we are. With tabulating machines the chance of manual error is reduced to a minimum. A basic quality of tabulating procedure is that there comes a point where error due to manual manipulation ceases to exist, and from that point on the machines function freely and with mechanical accuracy. With time the important factor, confronted by volume of detail and expenditure, speed and precision become imperative. I decided that it had to be tabulating equipment for Bridgeport, and we installed Remington Rand machines.

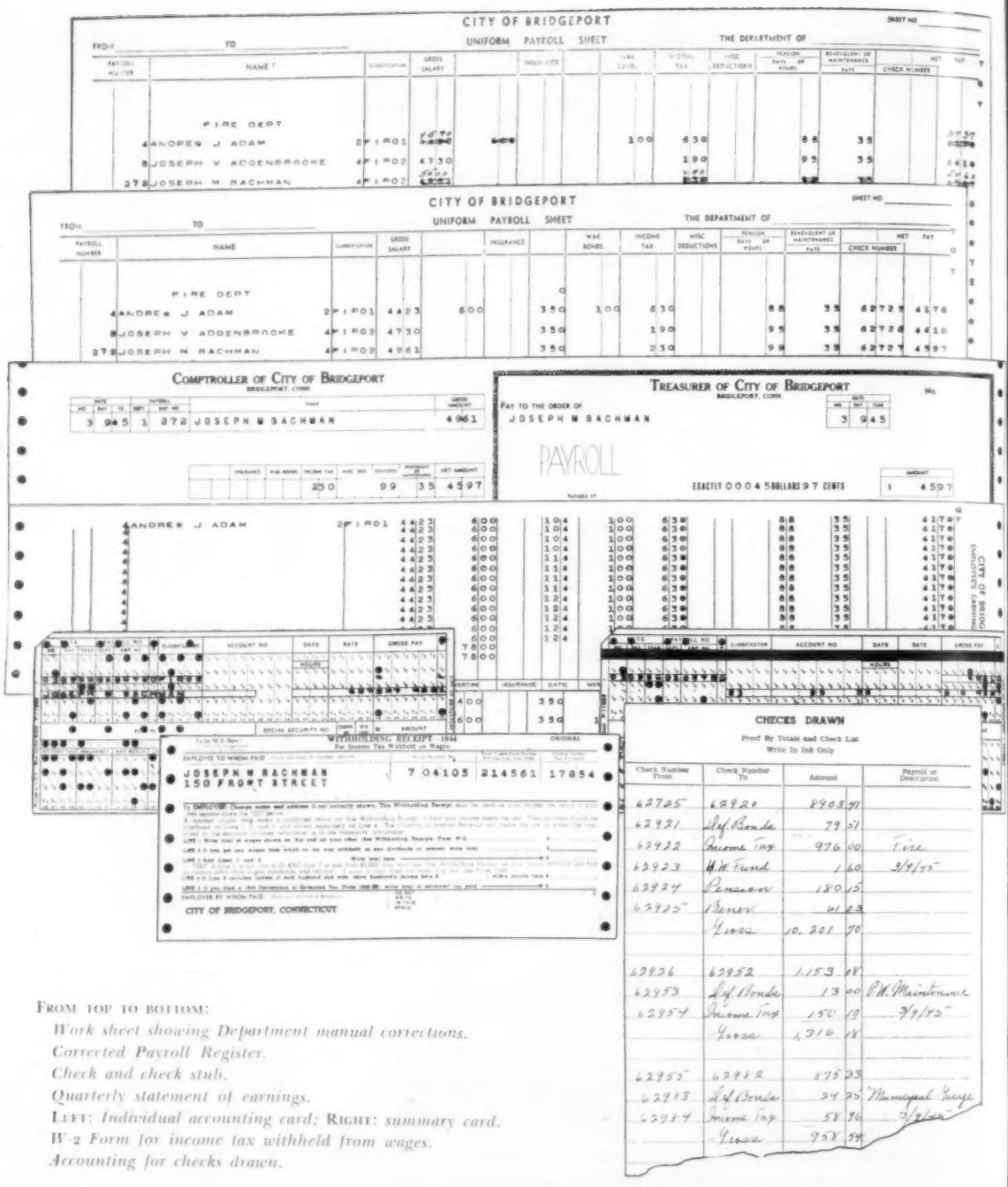
Our installation consists of three automatic key punches, one sorter, one multi-control reproducing punch, one interpreter, one alphabetic tabulator, one numeric tabulator and summary punch. Our operational procedure is as follows—

1. To arrange a fine alphabetic listing of all city employees whether under Civil Service or not and assign to each employee an employee number. To allow for expansion we did two things based on a 5-digit code—we skipped nine units between each number as 10, 20, 30, 40 for "A" and skipped between letters of the alphabet in proportion to frequency of their use—thus, "B"—2,700, 2,710, 2,720, to 5,330. Letter "C"—11,600, 11,610, 11,620, to number 13,810; "D"—19,200, 19,210, etc., till the last letter "Z" and the last name in that letter carries the personnel number 99,050. Once a

What Does It Cost Your City to Write a Pay Check?

Payroll costs of the City of Bridgeport, Conn., covering all phases of cost in connection with the production of pay checks, including their inception and the setting up of records, reporting, auditing and other applications:

DIRECT COSTS	
Salaries and wages direct	$ 6,780
Machine rentals	12,312
Forms—checks and other paper supplies	1,200
Messenger service, misc. machine expense	300
Misc. printing, binding and other supplies	150
Allocation of building expense to payroll department	250
	$20,992
Estimate of machine use for city application	$ 600
Direct cost producing checks	$20,392
Cost per check (direct cost) 124,400 checks	**16.03 cents**
INDIRECT COSTS	
Supervision (D'Aulisa, Rodman)	$ 1,600
Direct clerical—2 clerks, part time	600
Time of departmental clerks on payroll records	6,000
Civil service time	6,000
General bookkeeping	1,500
Auditing costs—general (Based on time consumed)	2,000
Audit contract for entire city $12,000	
Provision to cover other costs not enumerated because of insufficient data	600
Total indirect costs	$18,300
Less department clerical time used for other purposes which are a by-product of payroll records	2,000
	$16,300
SUMMARY	
Direct costs	$20,392
Indirect costs	16,300
Total costs	$36,692
Number of checks, 124,400	
Cost per check and related unit records	**29.04 cents**
Estimated median costs per check and related unit records on a national basis	$ 1.00


CITY OF BRIDGEPORT
UNIFORM PAYROLL SHEET
THE DEPARTMENT OF
FIRE DEPT
4 ANDREW J ADAM 2F 1 P01 4423 600 350 100 630 88 35 62725 4170
8 JOSEPH V ADDENBROOKE 4F 1 P02 4730 350 190 95 35 62726 4410
272 JOSEPH M RACHMAN 4F 1 P02 4961 350 230 99 35 62727 4597
COMPTROLLER OF CITY OF BRIDGEPORT
3 945 1 272 JOSEPH M BACHMAN 4961
250 99 35 4597
TREASURER OF CITY OF BRIDGEPORT
PAY TO THE ORDER OF
JOSEPH M BACHMAN
3 945
PAYROLL
EXACTLY 0004 597DOLLARS 97 CENTS
$ 4597
4 ANDREW J ADAM 2F 1 P01 4423 600 104 100 630 88 35 4170
WITHHOLDING RECEIPT 1944
JOSEPH M BACHMAN
150 FRONT STREET
7 04105 214561 17854
CITY OF BRIDGEPORT, CONNECTICUT
CHECKS DRAWN
Proof By Totals and Check List
Write In Ink Only
Check Number From
Check Number To
Amount
Payroll or Description
62725 62920 8903 91
62921 Def. Bonds 79 51
62922 Income Tax 976 00 Fire
62923 U.W. Fund 1 60 3/9/45
62924 Pension 180 45
62925 Gener. 6103
Gross 10.201 70
62926 62952 1153 98
62953 Def. Bonds 13 00 P.W. Maintenance
62954 Income Tax 150 19 3/9/45
Gross 1316 98
62955 62982 875 33
62983 Def. Bonds 24 25 Municipal Garage
62984 Income Tax 58 96 3/9/45
Gross 958 94

FROM TOP TO BOTTOM:
Work sheet showing Department manual corrections.
Corrected Payroll Register.
Check and check stub.
Quarterly statement of earnings.
LEFT: *Individual accounting card;* RIGHT: *summary card.*
W-2 Form for income tax withheld from wages.
Accounting for checks drawn.

number is assigned it is never reassigned.

2. Our payrolls were broken into classifications in accord with budget setup (form 1) coded so that it is possible to sort in departmental classes. This form, shown at the top of the illustration, is made up in triplicate and is the work sheet.

3. It is sent to the department where payroll changes for the next pay period are noted thereon as shown in the illustration. Therefore, the work sheet becomes the proved correct payroll listing for the week just passed. Now in the present week it is being altered to reflect changes in pay for the individual.

4. The department keeps the third copy and sends the original and duplicate to the Civil Service Department. Civil Service records are notated from the information and checked to see that the changes made on the payrolls are correct as to Civil Service regulation and law. This step is necessary because it is inherent in our law that all payrolls must be certified by the Civil Service Commission. When the Civil Service has certified the payroll or made its corrections, and incidentally the Civil Service has the last word in that respect (except for mathematical error), the original copy is sent to the Comptroller's Office and the duplicate is kept in the Civil Service Office.

5. Cards are then punched to conform with the changes made on the work sheet. We now have available a set of cards. One card contains the name, personnel number, classification and gross salary amount. In addition thereto we have individual cards containing the personnel number and accounting or deduction amounts

hown in the heading on illustration umber 1. These cards then go to the orter where they are sorted according o personnel number. This brings all ards together under the personnel umber control. From there they go to he numeric tabulator and summary unch where one summary card is cut om all of these cards and a listing is ade which proves the accuracy of the unching and the accuracy of the ini- al corrected payroll worksheet. The ummaries are cut and the proof run s made and checked. It is at this oint that the further possibility of uman error is reduced to a minimum. n fact practically eliminated. All reparation has been completed and roved correct. These summary cards hat have been produced are the cards hich actually draw the checks and rovide the financial record as to dis- ursements.

Control Cards for Checks and Records

In the meantime the necessary steps ave been taken to set up the vouchers harging appropriation records and a ontrol. The payroll is figured as to he number of checks required and a lock of fanfold, pin-feed checks are et to one side to take care of this par- icular payroll. The illustration shows simple control card which is kept, ac- ounting for every check number by locks and their use. The summary ards then go to the *alphabetic* 100- *ector tabulator* and a payroll register, n duplicate (form 2), is run. One opy of this register is retained by the Comptroller and one copy goes to the Treasurer. This forms additional proof s to the accuracy of the figuring and s to the accuracy of the check num- ers used. The same cards are run gain and the checks are printed from hem as shown in the illustration on he facing page.

A set of cards is immediately repro- uced from these summary cards and hey are put into a separate file to orm the accounting for check recon- iliation on payrolls. The register heets are bound and handed to a lerk who takes off the totals from the egisters and sets up a control by otals. This control forms the basis of proof with the appropriation accounts econciliation and the total must tie n with the figure used by the general ookkeeper for preparation of month- y statements.

Summary cards are then used to run listing by check number, accounting or every check. The total amount of his listing is the final proof that all ards are in existence and the total es in with the control totals. The summary cards are then put in file boxes which are sealed and put away.

Quarterly Reports

At the end of a quarter a bonus payroll is made up and it follows the same procedure as any other payroll. When this bonus payroll is completed and the cards have served their numerous functions, they are combined with the other payroll cards for the entire quarter and a quarterly statement is run, one copy of which is retained by the Comptroller for personnel information, and the original is sent to the employee for this record, a third copy goes to the personnel director. After this statement is run the cards are reprocessed and a single summary for the quarter, including the bonus run, is made. This summary is filed away and forms the basis for W-2 form reporting to the employee and government at the end of the year. The quarterly report form also is shown in the accompanying illustration.

This procedure, then, shows an absolute check and conformity to law in the preparation and processing of payrolls, and provides a perfect control of cash expenditure as reflected on the general books of accounts. It provides a mechanical bank reconciliation, provides personnel information as to payments, gives the employee an interim check on his earnings, and sets up a composite card each quarter for necessary governmental reporting for tax purposes.

A Small Town May Be a Great Community

By ARTHUR E. MORGAN

AS a pile of lumber, nails, and paint is not a house, so just a collection of people is not a community. There must be association, common spirit and interests, mutual confidence, respect for others' individuality, neighboring, and sharing the common lot. Men are not normal without community life. Civilization resides, not in our blood, but in our society. Men of unusual vigor and intelligence pass on to the larger world the attitudes, good or bad, they learned as children, usually in small communities.

In America the drift of educated, ambitious young people to cities is skimming the cream from small community life. Yet the next generation of both city and rural America must be supplied largely by our small communities. What they are today, America will be tomorrow. It is vital to our destiny that the people of our small communities shall be vigorous, intelligent, and well-educated.

"Where there is no vision the people perish." So it is with communities. Americans have had no great expectations of theirs, and have had no picture of what a great community might be like. The hope of the small town has been, not to be a great community, but to become a city. Seeing our communities as of little interest or importance, we have neglected them, robbed them, and fled from them.

Only as we come to see them as the sources of population and of national character and culture, and as possible centers of interest and opportunity, will our people choose them for their life careers. Economic and social security are not enough. If a community is to hold its boys and girls, building with them a great community, it must be to them a place of significance and of high adventure.

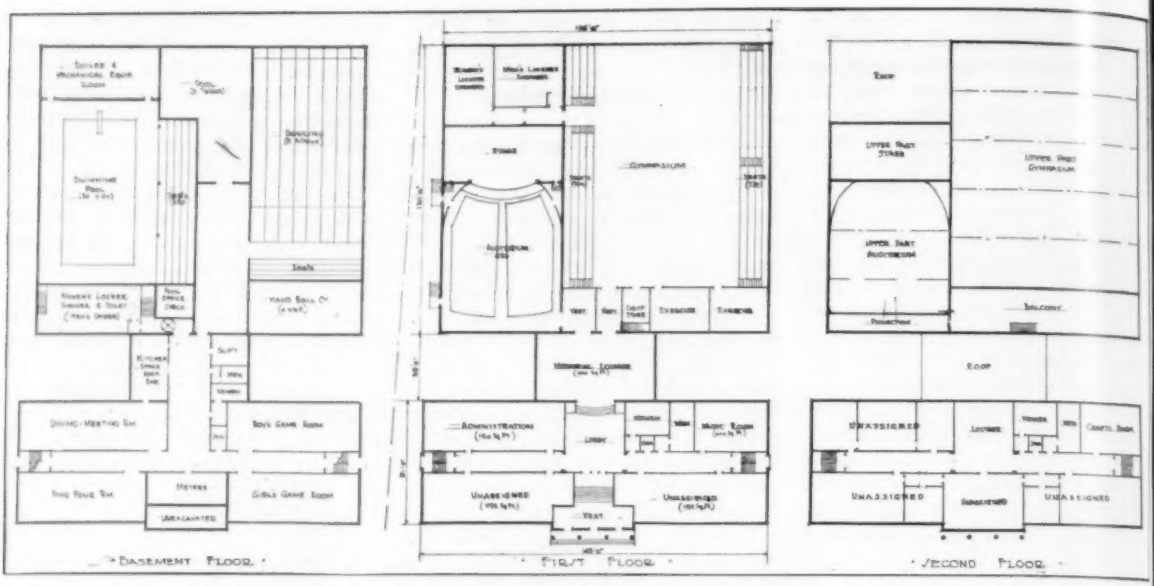
The great community does not follow the mass mind, but creates its own standards. Its citizens can be recognized by democratic simplicity, neighborliness, sincerity, and self-discipline. They travel widely and their doors and hearts are open to visitors. While concerned with world affairs, strong ties to neighbors and friends lead them to prefer fulfilment of their lives at home.

No one kind of excellence makes a great community. A town may be financially prosperous, yet dead. Neither is cultural interest alone enough. Design should cover every important phase of life. Local government requires planning. Economic life should make places for varied interests and abilities of young people. Planning is necessary for health, education, cultural growth, recreation, and ethical development. A community council may help unify the whole. Planning for a fine community, and working out those plans, can be a great community adventure.

Excerpts from an article on "The Community" in *The Journal* of the National Education Association, March 1945.

We are probably far from possessing as yet, all the articles of culture for which nature has fitted our country. To find these out, will require abundance of unsuccessful experiments. But if, in a multitude of these, we make one useful acquisition, it repays our trouble.

THOMAS JEFFERSON



Arrangements on three floors of the proposed memorial community house at Bloomfield

Bloomfield, N. J., Plans War Memorial

BLOOMFIELD, N. J., has taken its first steps toward the creation of a community center as a war memorial to Bloomfield citizens who have served and are serving in the World War.

The World War Second Memorial Committee, appointed by the Mayor early in 1944, has recently made its report recommending the construction of a permanent center for recreational, social, educational, civic, and other activities devoted to the common good.* It proposes that the building be erected in the center of town easily accessible to all residents of Bloomfield by the public transportation lines.

Plans call for a building of two stories and a basement floor with provision for numerous community facilities, including a swimming pool, bowling alleys, gymnasium, game rooms, craft room, music room, lounge, auditorium, theatre and stage, dining room, snack bar, etc. Parking space for 85 cars is reserved.

The total cost of construction is estimated at $520,000 with an additional $31,679 for equipment installed complete. The operation costs, including salaries of a permanent trained director and assistants, would be met by income from the use of the Center, which is estimated at around $33,000.

In submitting the plan to the Mayor, the Committee suggested that, if approved, a recommendation be made to the Town Council for official ratification and provision of sufficient funds for immediate completion of the design. It further recommended that the project then be turned over to the Board of Recreation Commissioners giving them full authority to complete the design, to hold it "on the shelf" until the right time for execution, and that the project remain permanently under the supervision of the Recreational Commissioners.

* Report of World War Second Memorial Committee, Bloomfield, N. J., January 5, 1945. 12 pp. Plans.

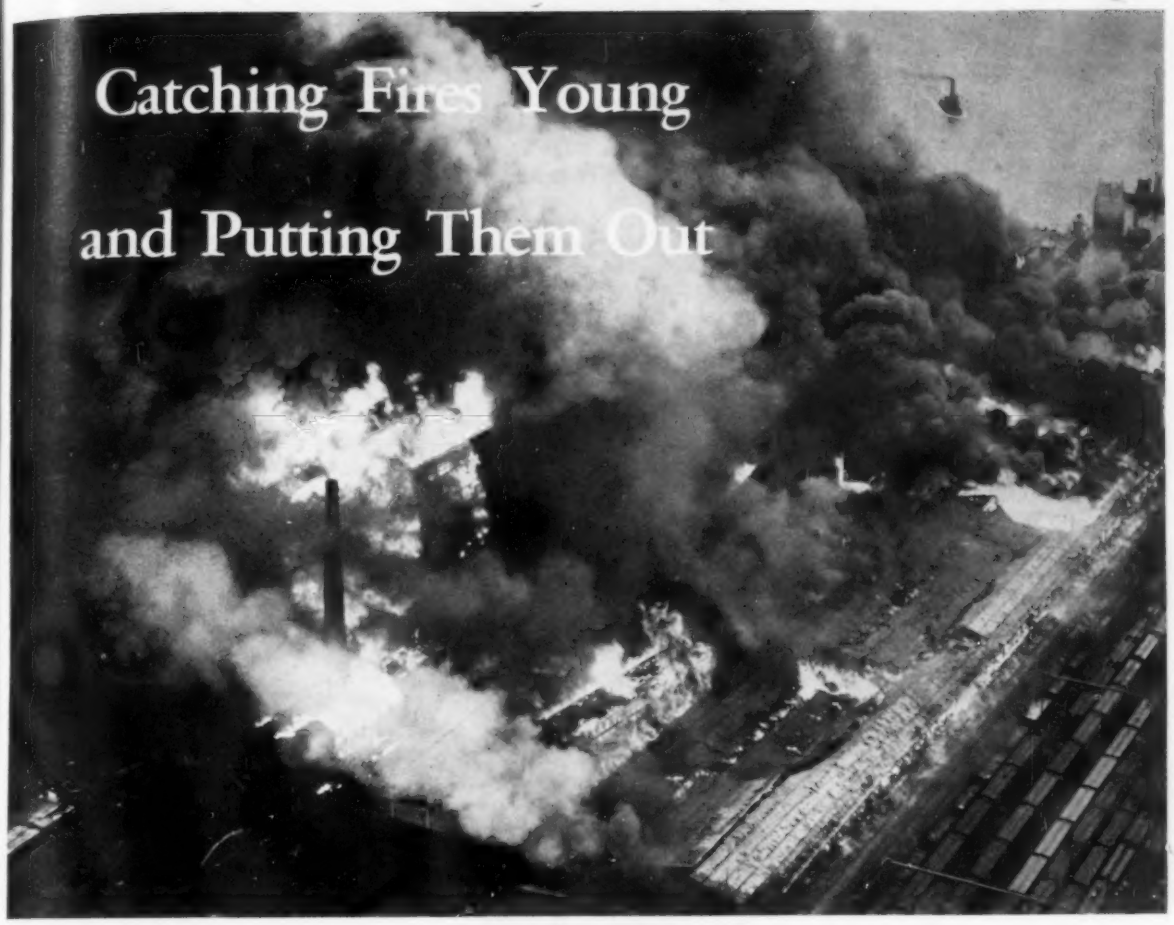
May 20, 1945, Designated "I Am an American Day"

American citizenship has never meant so much to so many people as it does at this time. Communities across the land will join in celebrating this privilege when they honor their new citizens on May 20, designated on March 14 by President Roosevelt as "I Am an American Day" for 1945.

These annual celebrations welcoming into citizenship those who have been naturalized or have attained their majority during the past year, have become memorable occasions in many of our cities and towns. Portland, Ore., has been featuring the induction of her new citizens into the body politic for almost a quarter of a century. Boston, Seattle, Greater New York, San Diego, Philadelphia, Chicago, Cincinnati and Cleveland, South Bend, Ind., and Miami, Fla., are only a few which have found varied ways of adapting pageantry, music, dancing, speeches of welcome and of acceptance to suit the event. Rochester, N. Y., holds citizenship suppers for new citizens, providing entertainment by local groups together with appropriate speeches on such subjects as "How Does Citizenship Work in a Democracy?", and "What is Patriotism?", the topics for the April and October suppers in 1944.

In his Proclamation, President Roosevelt called upon public officials to take the initiative in celebrating May 20, saying in part: "And I call upon Federal, state and local officials, and patriotic, civic, and educational organizations to hold on or about May 20, exercises designed to impress upon our citizens, both native born and naturalized, the privileges of their new status in our democracy and their responsibilities for building this nation's security and advancing its welfare."

Catching Fires Young and Putting Them Out



Some of the principal deficiencies and requirements of sound fire protection

ONE of the proved methods of preventing conflagrations is to get to the fire early with enough or too much first-class equipment. This truth is developed in a handsome book entitled "Conflagrations," bound in fire department red and illustrated with arresting color plates. It was prepared for fire departments and priced $5 for general distribution by Ward LaFrance Truck Division, Great American Industries, Inc., Elmira, N. Y.

The book has a foreword by T. Alfred Fleming, Director of Conservation of the National Board of Fire Underwriters. The body of the book was written by Paul W. Kearney, Consultant for Ward LaFrance Truck Division and well-known writer on public subjects. The first chapter discusses whether or not modern fires reach the grand proportions of the famous ones of the past. It is pointed out that although half of all actual alarms for fires in such big cities as Chicago, Los Angeles, and New York are handled without a single engine stream, nevertheless, each city continues to send around $40,000 worth of apparatus for practically every box alarm it receives. The reason for this measure is fairly obvious. Enough apparatus and men are sent on each alarm so that whether a fire be incipient or under way, it can be stamped out in the shortest possible time and prevented from becoming the kind of fire which some old-timers use as a yard stick for the spectacular.) The result of this prompt and usually sufficient method is that 65 percent of the fires do not cause $100 damage.

(On the other hand a mere one percent of fires accounts for 65 percent of the national fire loss.) Within this one percent occur the conflagrations, the one-a-week fire costing $250,000 or more. Percy Bugbee, General Manager of the National Fire Protection Association is quoted: "Until we plan our cities differently and build them differently, the possibility of sweeping fires must always be faced." Even in New York City the number of genuinely fire-retardant buildings totals only 1.4 percent of all the city's construction. The major hazards are (1) excessive areas containing abundant fuel but unbroken by fire walls, fire doors or other confinements which could hold an outbreak to its point of origin until the firemen get there; (2) unprotected vertical arteries (i.e., open stairwells, elevator and pipe shafts; even hollow walls devoid of fire stops at floor levels) which serve as flues to such a small outbreak all through a building in five or ten minutes; (3) inadequate protection against "exposure fires" in nearby buildings: lack of proper fire shutters, wired glass windows in approved metal frames, outside sprinklers or deluge systems; (4) lack of modern methods of automatic control such as supervised automatic sprinklers.

A number of historic conflagrations and current big fires is sufficiently discussed to give an understanding of the

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QUICK, DEPENDABLE SHIPMENT

defects involved. These blazes range from the San Francisco fire in 1906 to the Kewanee, Ill., conflagration in 1942. The munitions of war against these great fires consist of the steady improvement in fire-fighting equipment, water supply, firemen's training, and the betterment of other factors. Against these improvements are the new hazards of industry such as the manufacture of plastics and new chemicals. Although only 18 percent of the total number of fires occurs in commercial and industrial establishments, fires from plants manufacturing these new inflammables account for half of the total fire loss.

It is significant that a fire-retardant building loaded with combustible contents can house a roaring blaze for a much longer period than an inferior building, and the intense heat generated can ruin the building.

Water requirements of a big fire are illustrated by the $2,000,000 Cunard Pier fire in New York where 44 companies and 650 men working 44 hours poured 74,000,000 gallons of water into the fire. Such big-scale, hard and long fighting brings out clearly the necessity of having the best apparatus and equipment that can be produced by specialists. The need for the best in first-aid and life-saving equipment also is emphasized by the ambulance work in this Cunard Pier fire which involved 276 cases.

In planning the proper strength for the fire department it is well to remember that the taxpayer finances both the fire fighting bill and the fire loss bill. It is also true that in a number of instances there is insufficient insurance to cover the loss of building and contents.

In the chapter entitled "The Artillery Must Be Good," it is pointed out that with conflagration conditions almost a curtain of water must be put up around the fire, wetting down exposures to check the extension of the blaze. This requires an adequate water supply and also sufficient apparatus to make adequate use of it, and apparatus with the stamina to go through many hours of heavy duty without failure. These are the fires that can be depended on to retire old apparatus but it is not a method of replacement to be recommended. The book points out that the design of fire-fighting equipment should begin at the hydrant rather than at the drawing board. This means that the practical experience of the fire chief and the fire commissioner should be made use of. The stamina that is built into a pumping engine is dramatized by an actual grueling episode. When Montour Falls, N. Y., faced a serious water shortage in the fall of 1941, the fire department hooked up a pumper to the main, and water pressure was maintained through the emergency which persisted 24 hours a day for 31 days. This 500-gallon quadruple truck, delivered to Montour Falls in 1937, pumped continuously for 744 hours, consumed 2,200 gallons of gasoline or the equivalent of 15,300 miles.

Stamina is attained by design, the selection of the best materials, the construction and the workmanship. These factors are described in the form of specifications for frame, axles, engine, drive shafts, steering gears, service brakes, sheet metal, and pump. The book closes with 16 pages of formulas and tables of value to municipal officials concerned with fire prevention and fire protection. Write Ward La France, Elmira, for a free copy of this valuable book.

Central Steam Heating—a Post-War Reality?

Big business for the cities whether in revenues or taxes • A public service and a possible 20 billion dollar post-war market • A smokeless city.

By ROBERT L. FITZGERALD
Vice-President
The Duluth Steam Corporation, Duluth, Minn.

THE fuel restrictions of these war years have again turned men's and women's thoughts to the advantages of centrally generated steam distributed through a network of pipe lines to entire urban communities, so as to serve every heating or process need of all domestic, commercial, and industrial users.

For years the private and the municipal utilities have supplied the electrical, gas and water needs of entire communities—why not the heating? They do so in various degrees in a number of towns in the colder regions such as Minnesota. This service is given also by private utilities, notably the New York Steam Corporation. By and large, however, something has prevented any approach to full-scale provision of utility steam heating. The reasons for this and the opportunities for profit and public service in a neglected field should be investigated by capital seeking post-war productive investments. Cities owning steam-generating stations might find new revenue and public favor from such service and, where municipal facilities are not available or obtainable, cities might gain by taking a favorable attitude towards private enterprise in this field. It should not be overlooked that a profitable by-product of centrally generated heating is a lessening of smoke pollution of the city.

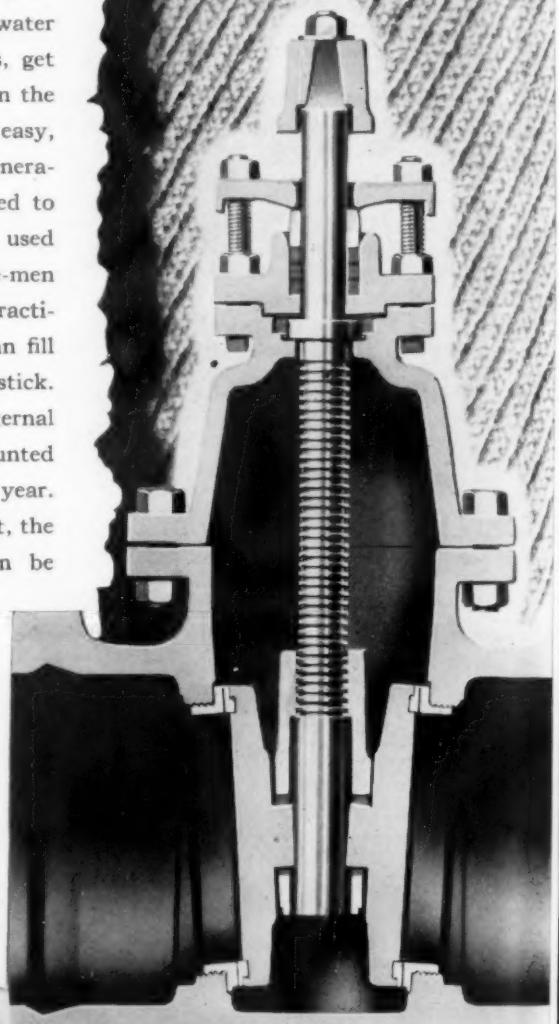
The considerable movement of people away from the smoke-befouled cities is destroying property values that reach hundreds of millions of dollars per year. This exodus with its resulting shrinkage of tax values seriously affects municipal tax revenues, and is forcing municipal officials to find added sources of revenue. The slum clearance and rebuilding scheduled for post-war work will be largely wasted, from a social standpoint, if central steam utility service is not available to clear up the smoke density which has degraded the area.

Feasible

To those who say that a central steam public utility in northern cities is not economically sound, the answer is that such conclusions were reached from experiences with methods, facilities and inefficiencies that prevailed 40 years ago, and are all based on the distribution of low-pressure steam and only partial market saturation. If boiler efficiencies today were only 45 percent, and steam in huge quantities had to be distributed at pressures of 10-20 pounds, a central steam public utility would still be an economic monstrosity. Today central boiler plant efficiencies

BURIED TREASURE

Buried deep underground, R. D. Wood gate-valves are the "treasures" of many a water department. They stay buried for years, get little attention, little operation. But when the time comes, they work. Their record for easy, dependable performance stretches back generations ago when they were first introduced to waterworks engineers. They are widely used today, because operating and maintenance-men recognize their rugged construction, their practical design. There are no pockets that can fill with sediment and scale to make them stick. There are only three parts in the internal mechanism. Valves are fully bronze-mounted to insure easy operation . . . year after year. Like the R. D. Wood "Mathews" hydrant, the R. D. Wood A.W.W.A. gate-valve can be counted on to do a good job.



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in excess of 85 percent are quite common and methods and materials for distributing steam in underground pipe lines at 250 pounds pressure are now easily available. Thanks to these changes, central steam public utilities, to serve completely closely built sections of communities regardless of size, can now be made economically sound and profitable operations. A central steam public utility serving a given city would be a bigger business than the combined water, gas and electric business serving the same community. One only needs to check this comparison in his own home.

Central Steam Economics

A central boiler plant, purchasing coal delivered to its track hopper, will buy coal for just about one-half of the price paid by the householder for truck delivery of the same quality coal. This price advantage in the purchase of coal provides a fund equal to 50 percent of the fuel bill of the community.

The other big economic advantage in central steam is in the efficiency of burning the coal. The isolated small plant is subject to very irregular firing by inexperienced help, it is poorly maintained and seldom properly cleaned, with the result that average efficiency will not exceed 50 percent. A central plant averages at least 85 percent efficiency. That is to say, the central plant produces the same amount of steam with only 65 percent of the amount of coal used by all of the isolated plants. All of this saving due to efficiency is not available as net saving. Part of this steam must be used to operate the boiler plant and part of it consumed in distribution line losses. Actually the coal required for the central plant amount to 96.2 percent of the total coal used for customers' heating operations.

Investment and Earnings

A central heating plant and distribution system for a typical city housing 35,000 people in built-up areas requires a 7,000-hp boiler plant and 47 miles of distribution lines, to serve 7,000 homes and the commercial and industrial steam needs of the city. It requires an investment of $135 per capita, or a total of $4,725,000. Such an installation is estimated to produce a gross revenue of $1,392,000 per year, on the basis of the retail coal cost when doing the heating job by individual plants. The operation estimate shows annual earnings, after interest, taxes and depreciation, of $52,480 which, if used with the depreciation reserve to retire bonds, would liquidate the entire investment in 24 years. *If the operation is by a municipality, free from taxes and financed with 2 percent municipal bonds, the investment could be retired in about 12 years from operating income and depreciation reserve.*

The amount of money required to build central steam utilities is frequently offered as an obstacle to such a program. It does take lots of money to build any public utility, whether it be gas, water, sewer, telephone, electricity or steam. The other utilities are all built now and the investment institutions, burdened with funds, are praying for just such a new utility construction program to absorb billions of idle dollars before the investment pressure of these accumulations drive the going bond rate down to 1 percent.

The Public Is Ready

The inherent fire risk in present heating methods plus the laborious responsibility of the home heating plant makes fireless heating attractive. The freedom of millions of people is restricted in winter through fear that the furnace may get out of hand with resultant destruction of property and the lives of the children, the elderly, and the invalids. These fears and the labor involved cause many families to abandon a comfortable house for an apartment. The rush to oil and gas heating was evidence of the desire for a carefree heating system. The public is more than ready for central steam utility service. Consider the present condition of the home heating plants:

Less than 20 percent are in good condition.

Sixty percent or more are in poor condition.

Less than 10 percent are skillfully operated.

About 20 percent are fairly well operated.

This is certainly the right time to plan to build central steam utilities, and the money required to replace this staggering total of over-age heating plants will finance over half of the total investment cost.

If those serving the heating needs of the community do not soon build these steam utilities, men outside the industry will step in and build them, or city governments, under public health and economic pressure, will build and operate them.

Airports and Recreation

ANY suggestion that airports should be made more attractive and park-like in appearance merits wholehearted approval and support. The proposal that the airport be developed as part of the city's recreation system, however, raises a number of questions as to the advisability of developing areas for dual use, says a writer in the April *Recreation* in reply to the proposal made in an earlier issue of that magazine.

In such a plan, three groups would be involved, says this critic—the air-traveling public, visitors who come to the airport primarily to enjoy the aircraft, and people who live in the airport neighborhood. Travelers need facilities, he agrees, and these might well include game, reading, and card rooms, dining facilities, radio services, together with such mild outdoor sports as shuffleboard, lawn bowling, croquet, and horseshoes, requiring small area and time, and which can be played in traveling clothes by one, two, or a few players.

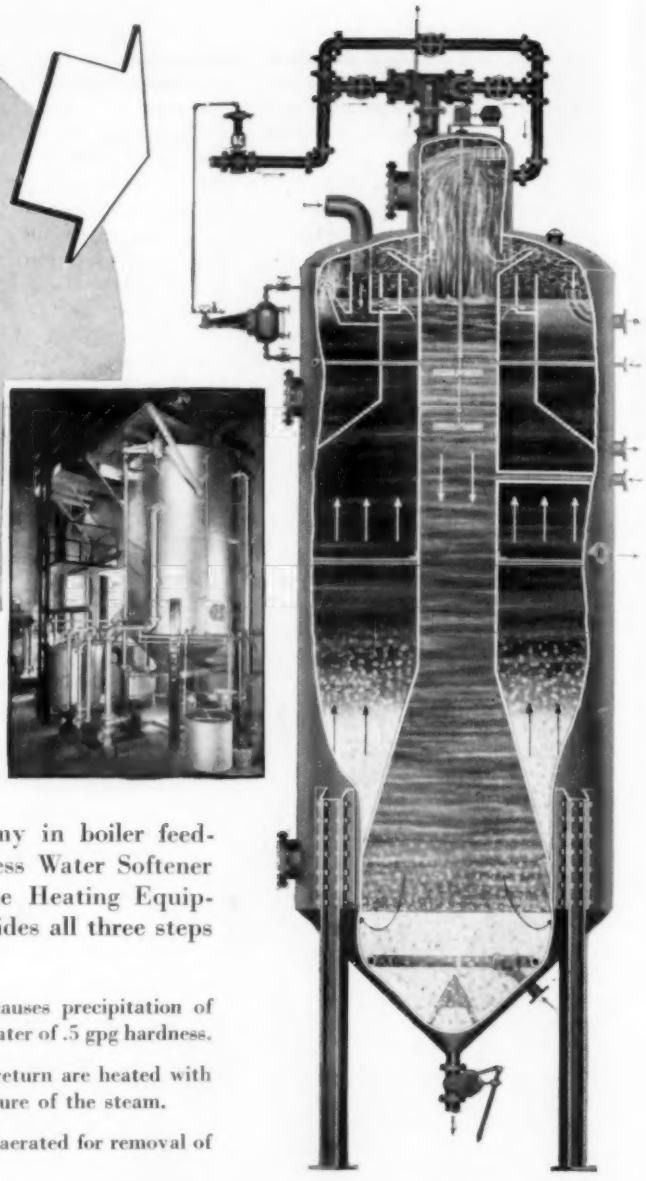
On the other hand, the neighborhood would need recreation facilities near its population center and for some parents the question of safety at an airport might be a consideration.

This critic, however, endorses the idea of developing adjacent to an airport such recreational areas as a municipal golf course; a large landscaped park with paths for hiking, bicycling, horseback riding, and scattered picnic facilities; or a community forest with opportunities for nature study, hiking, or picnicking in restricted locations. Even here the nearness of the airport should not be the determining factor, but the fact that such a site would afford maximum returns in economic and efficient service of its kind—and it should be separately managed and directed.

Gains in Assessed Values Lag Behind Real Estate Price Increases

Covering 62 of the 92 cities in the United States of more than 100,000 population, reports received by the National Association of Assessing Officers show real estate *assessments* for the year 1944 of $30,685,802,000 a compared with a total of $30,431,034,000 for the preceding year. This increase of only eight-tenths of one percent is in contrast to a median rise of 12½ percent in real estate *prices* between September 1943 and September 1944, disclosed by the latest semi-annual survey of the National Association of Real Estate Boards covering 84 percent of the cities reporting to that organization.

This one unit SOFTENS PRE-HEATS DEAERATES boiler feed water



Here's maximum efficiency and economy in boiler feedwater treatment. The Graver Hot Process Water Softener with built-in Deaerating and Condensate Heating Equipment is a single, compact unit that provides all three steps necessary for proper conditioning.

1. Chemical treatment of the raw water causes precipitation of scale-forming constituents resulting in soft water of .5 gpg hardness.

2. Both the raw water and the condensate return are heated with exhaust steam to within 2° of the temperature of the steam.

3. Both condensate and treated water are deaerated for removal of oxygen and free CO_2.

Why be satisfied with halfway measures? With this modern equipment, the danger of scaling, pitting, and corrosion is removed by removing the causes. And, by pre-heating, you have added efficiency and operating economy.

Get the facts about this compact, self-contained unit today. We'll gladly send full details upon request.

Cross-section view of the Graver Hot Process Water Softening and Deaerating Unit showing flow and action. This equipment can be built in any size to suit your needs.

GRAVER

WATER CONDITIONING EQUIPMENT

Process Equipment Division of

GRAVER TANK & MFG. CO., INC.

4809-35 Tod Ave., East Chicago, Ind.

NEW YORK CATASAUQUA, PA. CHICAGO TULSA

Hot Process Water Softeners • Zeolite Water Softeners
Water Filters • Chemical Mixing, Feeding, and Proportioning Equipment • Reactivators • Filtering Materials • Zeolites

Better Wearing Streets at Lower Cost

By GEORGE KLING
Superintendent, Department
of Streets and Highways
Union Township, N. J.

By reducing the size of the cover aggregate used in resurfacing Union Township streets, maintenance costs for 60 miles of streets were cut practically in half and at the same time a better street surface was produced. This and other labor-saving devices account for more than a 300 percent increase in street maintenance operations all within the same budget. In spite of the severe weather of the past winter, streets resurfaced by the new method suffered only 30 percent of the failures of previous years.

HERE'S how we initiated our new street surfacing program—

Previously the Township, as well as all other New Jersey Municipalities, County and State highway officials, specified ⅜-inch stone for covering the bitumen previously spread. Since the stone that we wanted was not produced in quantity in any New Jersey quarry, bids had to be received and a contract awarded to an out-of-state concern. We have now initiated the use of ¼-inch stone, and as a result of our successful use of it, local quarries are equipping their plants to produce this size in the future.

The fact that the stone from outside the state was shipped in by barge complicated operations somewhat. It required the creation of stockpiles at various strategic locations and reloading the aggregate into trucks. However, the Department was equipped with a Barber-Greene loader and a White front-end shovel, so this problem was not difficult to solve.

Spreading Aggregate

The aggregate was spread by departmentally owned trucks using a Buckeye aggregate spreader, acquired last year for the specific purpose of establishing more accurate control over the placing of the aggregate. Previously the stone was spread by the contractor furnishing it, with the bid price based on delivery on the street.

The smaller size of aggregate actually makes it possible to cut the amount of bitumen applied to the road about 50 percent, and to use a lighter grade. The larger ⅜-inch rock required excessive bitumen to hold it in place; and we estimate that about 30 percent of the ⅜-inch rock became loosened by traffic and with it 20 to 30 percent of the bitumen, which clung to it, was thrown to the shoulder of the road and wasted. We find too that the lighter tar used with the smaller stone bonds to the old road surface more easily.

While costs have been reduced, the total yardage has increased steadily for the past three years as follows—

1942—103,470 square yards surfaced
1943—192,600 " " "
1944—510,340 " " "

During the same period unit cost has gone down as follows—

1942—$0.115 per square yard
1943— 0.108 " " "
1944— 0.048 " " "

These costs include labor and material.

Union, with a total of 117 miles of streets to maintain, has surfaced approximately 60 miles of Township streets over an ordinary dirt base in the following manner—

Union is fortunate in having a soil that requires a minimum of stabilization. To prepare for the tar, all dirt roads that have not had a previous surface treatment of bitumen are treated with calcium chloride. Two such treatments are required. The first consists of 1½ pounds to the square yard, and the second application, which is made four weeks later, uses 1 pound to the square yard. These applications are made with a Good Roads rotary spreader attached to a truck.

Six weeks after the calcium chloride treatments have been administered the street is ready for surface treatment of bitumen. The first step is the application of ¼-gallon of grade R.T. 3 tar per square yard. The second treatment, placed four weeks after the first, is an application of ¼- to ⅓-gallon of grade R.T. 5 tar to the square yard. We believe the tar is more resilient than asphalt and it seems to have less of a tendency to crack and break up.

When the first tar treatment is down, 9 to 11 pounds of ¼-inch trap rock are spread to the square yard; after the second application of tar, 13 to 15 pounds of the same size stone are spread per square yard.

First Treatment

A lighter grade tar is used for the first treatment so that it will penetrate the dirt more readily and form a good surface to which the heavier grade tar will adhere.

With these two treatments of tar and stone a wearing course of close to ½-inch is obtained. After the traffic rolls the surface for several days the ¼-inch stone becomes completely covered with

The stone spreader is distributing stone over the wet tar as the truck backs up. Note that the tar overlaps the section previously laid.

Lithographed on stone by Edward A. Wilson

Just as long life is inherent in cast iron pipe, certain important advantages are inherent in pipe centrifugally cast in a metal mold. By the very nature of the Super-de Lavaud Process, pipe so cast is concentric, has uniform wall thickness and is free from sand or slag inclusions. The high quality of Super-de Lavaud Cast Iron Pipe is further assured by our rigid metallurgical and production controls.

U.S.
cast iron
PIPE

U. S. PIPE & FOUNDRY CO.
General Offices: Burlington, N. J.
Plants and Sales Offices throughout the U. S. A.

tar. A roller is not required.

This type of surface on a dirt base, such as that found in Union, is superior to a surface of pre-mixed material placed on a dirt road because it will penetrate the dirt and not simply lie on the top to be pushed by traffic.

The cost of material for the surfacing of dirt roads as accomplished in Union is estimated to be 30 percent less and the cost of labor 60 percent less than by surfacing with a pre-mixed top course.

Treating dirt base streets as above, we find they subsequently require one treatment each second and third year and thereafter only one treatment every second year.

A total of 3,507 tons of ¼-inch stone and 151,424 gallons of tar was used to cover 31 miles of streets in 1944. The stone specifications are:

	Percentage
Passing ⅜-inch round opening screen	100
" ¼ " " " "	85 to 100
" #10 " " "	0 to 25
" #30 " " "	0 to 10

Passing ⅜-inch square opening screen	100
" #4 " " "	85 to 100
" #10 " " "	0 to 25
" #30 " " "	0 to 10

Besides the benefits derived from the use of smaller aggregate there are several other reasons to account for the sturdiness of our streets. We have, of course, taken extra care to see that everything possible is done to enable our roads to give a maximum of service.

First, with the use of the smaller aggregate size we also get a better seal. This accounts to a high degree for the ability of our roads to stand up well, for, regardless of the type of construction, no road will withstand a severe winter if moisture can penetrate.

Second, precautions were taken to provide good drainage. Without this precaution water might remain in the gutters and work its way under the surface of the road where it would soften the subgrade. The traffic would then work the softened subgrade to the surface, breaking the seal and in many instances cause ruts in and a breaking up of the surface.

To eliminate this as much as possible we extended to full width 95 percent of all roads surface-treated. The bitumen was also spread the full width, or to the curb line. However, as it takes from 3 to 4 years to do a good seal job in the gutter, we will have some failures until these gutters have been compacted. It requires light pneumatic-tired traffic to compact a dirt road. The steel wheel roller will not do the job as well. Since we do not have enough of this type of work to warrant the purchase of a rubber-tired roller, we must, therefore, wait until traffic compacts it.

The Buckeye Stone Spreader is viewed from the front of the truck to which it is attached. It projects beyond both sides of the truck.

Third, our success in removing the winter snows from the roads as they fall helps to no little extent. If snow is allowed to stay on the roadway, as it melts, it will work its way through the surface of any unsealed spots. Also, unplowed snow will not allow the water to run off as it melts. It will freeze at night, melt in the daytime, and a continual melting and freezing will also break the surface. The gutters and catch basins are kept clear of ice and snow to accommodate the water from melting snow.

Germans Ruin Water Supply Last

A MUNICIPALITY'S water supply is among the last things to be destroyed by an army when it retreats from a city, according to Lt. Col. Leo B. Roberts, Corps of Engineers, United S ates Army. Col. Roberts' observations were based on a review of conditions that existed in Cherbourg, France, during the invasion.

The water supply, Col. Roberts pointed out, is a service that the occupying army needs until the moment it has to evacuate. At Cherbourg the Germans were able to proceed with their demolition of port facilities more or less at their leisure, but they needed the water supply as long as they remained in the city.

German demolition of the water supply consisted of making two breaks in the transmission lines, each disrupting the line for about 200 feet. Similarly, their demolition of the sewers consisted of dropping hand grenades down each manhole. There was no effort to destroy the filtration plant and pumping station, nor the sewage treatment plant. Destruction of these, in any case, Col. Roberts pointed out, would not have hampered activities a great deal since the army engineers had planned long in advance to have sufficient portable water units included in the first shipments of supplies to care adequately for such an emergency.

"There are three qualities that must be demonstrated in order to rapidly take a municipality like Cherbourg out of the class of military liabilities and into the class of assets," Col. Roberts stated. "One is speed, another is ingenuity, and the third is the cooperation of the people in the locality. Our engineer troops showed that they have the first two, and those French municipal officials proved themselves to be real patriots. They promptly organized their repair crews from the pre-war municipal organizations, both water and sewerage departments, and went to work. They brought out pipe and other supplies that they had carefully cached away during the period of the occupation and they helped us trace down pipe lines and valve boxes that would have been most difficult to find without their help."

The schedule of the city's liberation and subsequent return to military importance shows the speed with which both engineers and civilians worked. On June 6, the invasion began. On the 11th the first explosion occurred that could be identified as a demolition charge. On the 26th, the city was taken. Within 48 hours, key streets had been reopened and by the first of July, water services had been restored. Shortly thereafter sewers were operating.

The restoration of port facilities took longer. The Germans had used the utmost skill and ingenuity in demolishing the port and confidently felt that they had rendered it useless for at least two decades. However, within 30 days it was back in limited operation and later had a port capacity adequate to support the operation.

Emergency Plant by Roberts Filter Averts Disaster at Columbia, Pa.

First Flood Warning Comes After Sudden Rise of Susquehanna River

On January 8th, after several weeks of ice jams in the Susquehanna River, a sudden and very heavy rise in the river flooded the Water Works at Columbia, Pa. Pipes were frozen. The large Diesel engines were submerged . . . unable to run. Columbia's daily water supply of 1,200,000 gallons was in danger of being cut off.

Photograph of emergency filtration equipment installed in one week. Working night and day and using mostly materials held in reserve, this emergency plant supplied 700,000 gallons of water daily and averted a serious water shortage problem to residents and war plants.

Quick Action Demanded

With only a three and one-half day supply of treated water in the distributing reservoir, emergency measures were taken. Rationing of existing water supplies was requested. Studies were made to determine where additional water could be obtained, including the possibility of laying an eight mile pipe line to the City of York.

Roberts Filter Goes Into Action

On January 13th . . . after closing hours . . . a call from I. M. Glace, Consulting Engineer, was received at the offices of Roberts Filter requesting equipment for an emergency filtering plant. Roberts Filter engineers and production staffs went to work, depending in great measure on reserve materials held in stock for such emergencies. Fabrication, assembly, piping, controls . . . every detail was produced to specifications. This work was completed on January 20th . . . one week to the day after the first call was received. The emergency plant was constructed and ready for operation when the ice jam broke.

War Plants Keep Running . . . Epidemic Averted

On March 11th, the expected flood came. The permanent filter plant of the Columbia Water Works was several feet under water. Within three hours after the break, a Roberts engineer was on the scene. The Columbia Water Company was able to supply the town with 700,000 gallons of water daily during the flood from the emergency filter plant that had been set up . . . maintaining its record of uninterrupted service to the community since 1823. Many hours in Columbia War Plants were saved. What could have been a very serious epidemic was averted.

Roberts Filter is a dependable organization to work with. Our record over the years speaks for itself.

ROBERTS FILTER MANUFACTURING CO.
660 COLUMBIA AVENUE • *DARBY, PENNSYLVANIA*

Pittsburgh's Experience with Its Graded Tax Law

IN the opinion of some of the members of the City Council and other civic leaders of Pittsburgh, Pa., that city has profited so greatly from its Graded Tax Law that a further extension of the benefits of that law is desirable. A bill has, therefore, been introduced in the 1945 session of the State Legislature to make such extension possible.

As many readers of THE AMERICAN CITY are aware, the law under which Pennsylvania's cities of the second class (Pittsburgh and Scranton) have been levying their real estate taxes was enacted in 1913. Under its terms these two cities are permitted to make a separate assessment of land values and of improvement values, and they were authorized to reduce gradually the millage on the improvement values until 1925, when this millage (for municipal, but not country or school district taxes) became one-half of that assessed against land values. For the last twenty years this basis of taxation has been maintained, but there has been no legislative authorization for the further reduction now sought in the tax rate on improvements. If House Bill No. 452, now before the Pennsylvania Legislature, becomes law, it would be the duty of the City Councils of Pittsburgh and Scranton each year hereafter to assess the tax upon buildings at three-tenths, instead of five-tenths as at present, of the rate of tax assessed against land values.

For the graphs here reproduced, showing Pittsburgh's assessed valuations and tax rates for municipal purposes, THE AMERICAN CITY is indebted to Councilman Walter R. Demmler. In a statement accompanying these charts, Mr. Demmler writes:

"During the first few years of the operation of this act there were active efforts made by the land-holding interests, the Real Estate Board and the Chamber of Commerce to have the law repealed. In recent years, however, there has been no extended active effort in that direction. Various interpretations of the effect of this law on the city of Pittsburgh have been made. The graphs of assessments and millage rates give a story which receives various interpretations."

At a meeting of the City Council on February 5, 1945, at which suggestions for the Pittsburgh tax base were discussed, Councilman Demmler said:

"I am convinced Pittsburgh should have granted to it by the Legislature a greater amount of home rule in matters regarding its own affairs. Should any relief be granted to what is generally known as 'real estate,' I would want that relief to be granted on the improvement. Building owners should be granted relief from taxes on their building or improvement. The home owner especially should have this benefit. Home building construction and improvement would be encouraged and stimulated.

"I quote from my statement printed in the *Municipal Record* of the Proceedings of Council of the City of Pittsburgh for December 11, 1944:

"'As an individual I shall oppose the levying of any tax until the community has taken for its revenue the entire value created by the services which it renders.

"'As a Councilman of the City of Pittsburgh, I shall advocate legislation which will give to the local community a greater power to enable it better to rule its own home affairs. I will not advocate the placing of more taxes on industry or the imposition of nuisance taxes.

"'I wish to state that I am convinced Pittsburgh has a sound tax system and if fair and honestly administered and extended to County and School Board revenue it will prove to be the best example of raising municipal revenue in the country.'"

Who Will Build a "City of Tomorrow"?

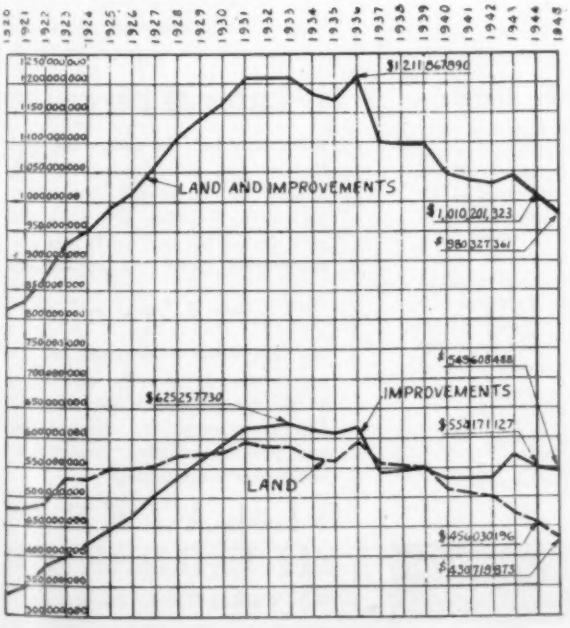
"A city which could honestly call itself a City of Tomorrow would bring almost the whole world to its door," writes Editor Henry H. Saylor of the *Journal of the American Institute of Architects* in the March issue of that alert monthly.

"I am thinking of a full-grown city," says Mr. Saylor,"—not a village like Greenbelt or Greendale—but a city which, having realized its Topsy-like growth, will have rebuilt itself to the measure of today's thinking; a city which is rebuilt on a master plan of proper land use, effective circulation and the amenities."

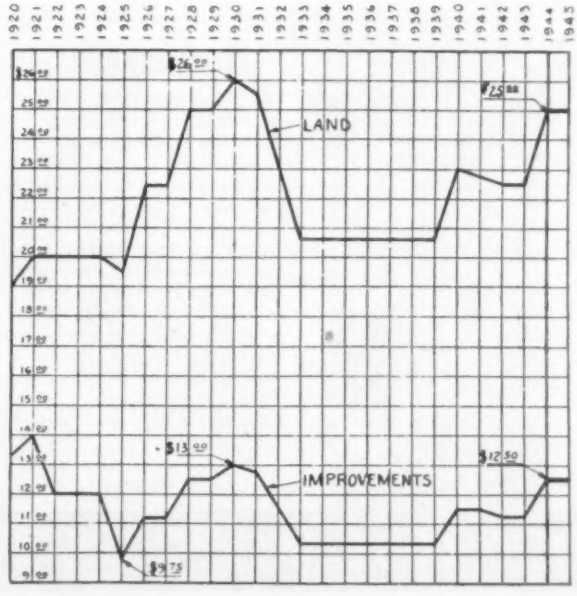
To the "it couldn't be done" critics, the author points to the similar skepticism that would have greeted a suggestion, four years ago, "that we could wage successfully two wars across our two oceans, spending for that purpose over 238 billions to date."

And the AIA Editor adds: "An error that we perhaps have learned to avoid, in these last few years, is that of underestimating the capability of America in accomplishing that which it really wants to do."

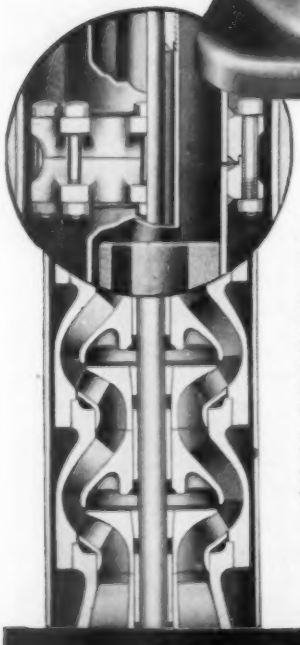
ASSESSED VALUATION



TAX RATE



COOK



TRUSTWORTHY AS TIME

It's the consistent, day-in and day-out performance of Cook Deep Well Turbine Pumps that has justified their choice by men "Who Know." For, the ONE thing no price list shows—no catalog illustrates—is the *priceless experience* of specially trained craftsmen who take pride in assuring you the closer tolerances . . . finer finishes . . . higher efficiencies for which Cook products are famous. In deference to this genuine, painstaking craftsmanship we don't strive to build *all* the world's turbine pumps—*just the best ones.* Send today for Cook Catalog 360-A, and be convinced. Choice of oil or water lubricated.

In circle—view of Cook Flanged Coupling showing heavy welded and bolted joint. **Left**—*section through Enclosed-Shaft Turbine. Note streamlined, mathematically precise passage through impellers and bowls to give maximum upward thrust to water column.*

A. D. COOK, INC. DEEP WELL TURBINE DIVISION Lawrenceburg, Indiana

OK CHAMPION
SEWER CLEANERS

PROMPT DELIVERY—While the manufacture of material for the Armed Forces has slowed deliveries of our Power Model Sewer Cleaners, we build two sizes of hand-operated OK Champions that are ready for immediate shipment.

LOW COST—The OK Champion Junior and Standard Sewer Cleaners are nominally priced. The smallest towns and villages are now keeping their sewerage systems in 100% operating capacity with OK Champions.

Ask for Literature

Champion Corporation
4716 Sheffield Ave. Hammond, Ind.

WHY—

The above illustration shows the position of the rubber lining in

Bi-Lateral Fire Hose

when it is held in a flattened position between calls into service. This is why we can save a city one replacement, because the hose will give double the service of any hose constructed under the old method.

—Also—

We can load 25% more on the apparatus-bed, actually making an $8,000 truck loaded with the Bi-Lateral construction, cheaper than one priced at $7,000 when loaded with other construction.

BI-LATERAL FIRE HOSE CO.
20 N. Wacker Drive, Chicago, Illinois

Stadium Feature of Proposed Recreation Center

Fort Lauderdale's proposed development of a recreational area for both tourists and permanent residents.

FORT LAUDERDALE, FLA., has completed plans for a proposed Recreation Center to be located in the northeast section of that city.

Provision has been made in the Recreation Center for a reinforced concrete stadium which would seat approximately 10,000 persons, with such necessary facilities as showers, concessions, offices, etc. The stadium as planned will consist of two stands, located on either side of the playing field, with garage space under some sections of the stadium for the equipment of the Parks Department, which will have headquarters within the park.

Plans are being worked out whereby the stadium can be financed largely by public subscription, if the various civic clubs cooperate in a promotion campaign. One-half the structure will be built at a time, providing seating facilities for 5,000 persons.

Community Center Building

The main feature of the park is to be a joint tourist and community center building with a combination auditorium and gymnasium for large community affairs, as well as for games and sporting events. There will be a fountain and restaurant in the building, which should largely pay for the building's regular maintenance.

Areas will be provided for indoor games, as well as club rooms for local clubs, tourists' clubs and groups. There will also be facilities for shuffleboard, tennis, badminton, bowling, and other outdoor games, adjoining the building.

In one corner of the park will be located an outdoor theatre with a seating capacity of approximately 3,000, planned as a replacement for the outdated bandstand in Stranahan Park. In other areas of the park, there will be facilities for softball, archery, and other games that require large spaces. With the modern ball park planned for the Recreation Center, Fort Lauderdale will be able to draw big league baseball teams for their Spring training. This field will also be used by the local high school. In connection with all the features planned, large parking areas are to be provided.

The open sections are to be planted with grass, tropical plants, trees and shrubs, and provisions made in these sections for small picnic areas.

That the entire park can be properly cared for in time of dry weather, wells will be drilled on the property and an underground sprinkling system provided.

This Recreation Center was first conceived by the Park Board in 1940 at the request of the City Commission. The plans have been prepared by Porter G. Reynolds, Superintendent of Parks and Recreation for the City of Fort Lauderdale, who received his degree in Landscape Architecture from the University of Florida. His plans have been recommended by the Planning Board of the City of Fort Lauderdale, and adopted by the City Commission.

At the present time the city has acquired approximately two-thirds of all the property within the area. From all indications, the remaining portion will be acquired during this fiscal year which ends August 31, 1945. If done, development of the park will be well under way, since the acquisition of the property and plans are prerequisites before any program of financing can be undertaken.

Modern Cemetery

Plans have also been made by Mr. Reynolds for a modern cemetery for Fort Lauderdale to be known as Memorial Park—an area of fifty acres situated within the city limits. The whole area will eventually be attractively landscaped in accord with an over-all plan for the cemetery. Driveways will be constructed of stone with oil and slag finish. At least half the cemetery will be developed before any lots are sold. Lots will be sold with restrictions prohibiting the building of curbs, walks, vaults, or any other above-ground structure. Each lot will be marked at the corners by permanent bronze markers flush with the ground, and graves will be similarly marked with low bronze markers. With present plans, owners will have no expense after acquiring the lot since all maintenance will be taken care of by the city out of income from a perpetual care fund to be accumulated by reserves from the purchase price. The investments of this fund will be under the direction of a Board of Trustees.

Perpetual Cemetery Maintenance

SAGINAW, Mich., has prepared a folder on perpetual care of cemetry lots, outlining a plan by which a lot owner may provide for care of his cemetery lot by an endowment with the city. Funds so subscribed would supplement materially what the city is able to do out of its own limited resources, city officials said in reporting that the suggestion has met with a favorable reception by many cemetery lot owners.

ARE YOU READY FOR A BIG ONE?

Because most conflagrations are small at the start, speed in getting to the scene and into action ranks first in importance. Ward LaFrance pumpers are first in ability to do just that . . . But it's the *big* fire that costs big money, and when one breaks out, *stamina* is what counts . . . A recent fire in an eastern city cost $275,000, due in good part to the fact that three pumpers broke down. Ward LaFrance pumpers "get there fast" and *stay on the job* . . . WARD LA FRANCE has meant absolute dependability to fire fighters for twenty-five years. Today Ward LaFrance pumpers are the choice of our largest American cities, as well as small towns. Why not write our Sales Department today, outlining the needs of your community?

WARD LAFRANCE

TRUCK DIVISION

GREAT AMERICAN INDUSTRIES, INC.

ELMIRA, NEW YORK

Thirty-Two More Cities Report Post-War Plans

This is the final number in this second series of reports of plans by cities for post-war improvements. In the two series published since November, 1942, in THE AMERICAN CITY, 665 municipalities of over 10,000 population have reported their plans for post-war improvements to be undertaken as soon as men and materials become available.

The replies came in response to a questionnaire which included the following inquiries:

1. If your city has begun to plan for public works or other municipal improvements to be undertaken when materials and manpower are available, what are the principal types of projects contemplated and approximate cost of same?

2. Which of these plans have reached the "blue-print" stage?

3. What responsibilities and powers does your City Planning Commission have as to post-war planning?

4. Has your city adopted a "capital budget"?

5. If your city is setting aside any reserves, in war bonds or otherwise, for post-war public works, what is the present total of such reserves?

6. Is your community planning a War Memorial? If so, what type?

Where replies to numbers 2, 4, 5, or 6 are omitted, this indicates either that the reply was in the negative or that no definite action has yet been taken.

Arlington, Va.

FRANK C. HANRAHAN, County Manager:

1. Already enlarging our water works system, as we could not wait for post-war, due to the net increase in population. More than $1,000,000 will be spent. Increase in sewer disposal plant capacity; increased drainage facilities. Added playgrounds.
2. Sewer project now under study by Engineer-Consultant. Blue-prints of proposed drainage project recently completed.
3. Advisory only.
5. Limited amount.
6. Various citizens' organizations are holding meetings to avoid duplication of discussions.

Beloit, Wis.

A. D. TELFER, City Manager:

1. High school; disposal plant; municipal building; street and sewer improvements; bridges.
2. High school and disposal plant.
3. Preparation of plan, and recommendations only.
4. Now being considered in connection with our post-war plan.
5. $200,000.
6. Yes. Type not yet decided, but will be of practical nature.

Bremerton, Wash.

L. "HUM" KEAN, Mayor:

1. Bridge ($2,250,000); street widening ($400,000); street separation ($50,000); sewers ($80,000).
2. Street widening; street separation; sewers.
3. Advisory only.
5. $125,000 in the Water Department. $96,000 for general city structures.

Dallas, Texas

V. R. SMITHAM, City Manager:

1. An over-all Master Plan is in preparation now by Harland Bartholomew, which includes municipal improvements of all descriptions: streets and highways, sanitary and storm sewers, schools, parks and playgrounds, airport, public buildings, etc.
2. Portions of plans for streets and highways, sanitary sewers, water main extensions, and airports are in the blueprint stage.
3. Each phase of the Master Plan is being studied in turn by the Plan Commission. Finally, the Commission will make its recommendations to the City Council on the complete plan for subsequent action by the Council.
4. Not yet ready. The Master Plan will probably call for the expenditure of $60,000,000 to cover improvements for the next 25 years.
5. Approximately $3,500,000.
6. Yes. For one thing—an inner-city highway loop to be called Memorial Parkway.

Del Rio, Texas

H. CONGER JONES, City Engineer:

1. Most planning is in the "talking" stage, but includes extension to water mains, to sanitary sewer, and the building of a sewage treatment plant, some storm sewers, additional fire alarm boxes, and street improvements.
2. Contour map data of city for sewers complete with proposed lines, but no detail drawings. Extension to water mains in plan.
3. Chamber of Commerce Committee works with Mayor and Commissioners. Has no official power.
6. No, but San Felipe School District plans a football field and some kind of memorial, the funds to be contributed by citizens.

Everett, Wash.

H. ARENDS, Mayor:

1. Water ($986,500); streets ($563,342); bridges ($100,000); sewage disposal ($235,000); schools ($1,050,000); buildings ($69,600); port ($1,400,000); parks ($58,000).
2. Water projects; sewage disposal; schools; buildings; parks.
5. None; City Council is in charge.
5. $350,000 is available for the water projects; $20,000 for the streets; $600,000 for the schools; $100,000 for proposed buildings; and $34,000 for the parks. All projects are planned and dependent on either federal or state aid.

Harrison Township, Pa.

ZYGMUNT SIEMIANOWSKI, Secretary:

1. Roads and streets; sanitary and storm sewers; park. No approximate figures.
6. Yes. A park.

Indiana, Pa.

THOMAS PEALER, Consulting Engineer:

1. Sewerage and sewage disposal ($204,630); street paving ($139,450); resurfacing and surface treatment paving ($76,400); playgrounds ($65,000); walks and curbs ($34,173).
2. Sewerage and sewage disposal.

Johnson City, Tenn.

M. U. SNODERLY, City Manager:

1. 3-million gpd water filtration plant to be built this spring if WPB gives approval. Other post-war plans include extension of water mains, storm sewers, sewage disposal plant including intercepter sewer and outfalls, remodelling of the city jail, and a roof for 3-million gallon reservoir.
2. 3-M gpd filter plant; water main extension; addition to jail, one by-pass storm sewer.
3. Plans capital improvement program—advisory powers only.
5. $225,000 in government bonds.

Klamath Falls, Ore.

ED OSTENDORF, Mayor:

1. Cemetery ($100,000); veterans' memorial park ($100,000); swimming pool ($80,000).
2. Cemetery.
3. Can only make recommendations to the Common Council. No powers or responsibilities.
5. $70,530.
6. Veterans' memorial park.

Lewistown, Pa.

HENRY D. HARRAL, City Manager:

1. Sewage disposal plant ($400,000); sewer extensions ($50,000); road improvements ($50,000); street lighting ($27,000); traffic signal installations ($5,000).
3. City Planning Commission ordinance passed March 5, 1945, gives it zoning powers and planning powers of state act. No policy has yet been determined, but the Commission is expected to act as the focal point for all post-war planning.
5. $13,560 in Post-War Capital Reserve Fund.

Longview, Texas

G. A. MCCREIGHT, Mayor

1. Sewage disposal plant ($150,000); addition to water system ($100,000); street paving ($100,000).
2. Street paving and water system.
3. None except our regular program.
5. $150,000 in war bonds.

Marietta, Ohio

HANLEY A. HACKETT, Clerk:

1. Street and sewer construction and repairs.
2. Streets.
3. We have no Planning Commission.

Traxcavator digging up old street surfacing in a Virginia town.

Traxcavator grading between lanes on U. S. Highway 30, near Valparaiso, Indiana.

OPERATORS KNOW THE WORD FOR IT—

"TRAXCAVATING!"

Traxcavator excavating and loading for barracks foundations at an army camp, Indianapolis, Ind.

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Traxcavator preparing right-of-way for a cross-country pipe line in Illinois.

Traxcavator backfilling between walls of a percolating dam at San Jose, California.

Meadville, Pa.

FRED F. WHIPPLE, Mayor:

1. Refuse incinerator ($80,000); water softener ($65,000); paving and repaving ($75,000); two grade crossing eliminations ($600,000); sidewalks and drainage ($20,000).
2. Incinerator (partially); paving, grade crossings in preliminary stages.
3. Supervision of street and lot layout only.
5. $75,000 for incinerators; $65,000 for water softener; paving and sidewalks by 100 percent assessment.

Morgantown, W. Va.

J. E. SNYDER, Acting City Manager:

1. Sanitary and storm sewers ($465,468); 3 fire station buildings and equipment ($72,000); sewage ($383,400); streets ($1,909,182); parking facilities ($104,000); airport runway extensions ($2,500,000); park development ($343,500).
2. Park development.
3. Plans type and kind of projects, construction and financing are authorized by City Council only.
5. Retiring present and past indebtedness.
6. Yes. 40-acre recreation park.

New Kensington, Pa.

R. M. DOUGLASS, City Engineer:

1. Storm sewer system ($100,000); street widening and improvement ($30,000); rebuilding overhead viaduct ($75,000); creek changes and improvements ($30,000).
2. Storm sewer system.
3. Advisory only.
5. Not setting up any reserves. Contemplating short term bonds.

North Providence, R. I.

STANLEY F. CORNISH, President, Town Council:

1. Extension of sanitary sewers; highway construction; school additions and replacements; memorial building to house library and veterans' orgainizations.
3. Advisory only.
6. Yes. See above.

Olympia, Wash.

B. F. HUME, Clerk-Treasurer:

1. New sewer system and disposal plant ($1,000,000).
2. Preliminary stages.
3. Advisory capacity to the City Commission.
5. $100,000 in war bonds; $50,000 lighting reserve; also small reserve started for sewer project.

Pampa, Texas

W. C. DECORDOVA, City Manager:

1. Water improvements ($275,000); street improvements ($114,000); water softener ($75,000); storm sewers ($63,000); sewer extension and repair $350,000); park improvements ($70,000;) bridges ($20,000).
2. Sewer extension and repair.
3. Responsibility of recommending to the City Commission needed improvements.
5. $110,000.

Plymouth Borough, Pa.

GEORGE TREBILCOX, Secretary:

1. Paving; sewers; swimming pool. These projects will be dependent on federal or state aid.

Portsmouth, Va.

ARTHUR S. OWEN, City Manager:

1. Sewage disposal plant ($650,000); waterwork improvements ($550,000); new streets ($820,000); curb and gutters ($100,000); library ($150,000); recreation park ($204,000); municipal building ($1,250,000); fire department ($275,000).
2. Sewage disposal plant; waterwork improvements; municipal building.
5. Approximately $800,000.
6. Yes. Undecided.

Sherman, Texas

T. F. ASTON, Mayor:

1. Sewage disposal plant ($135,000); police station and health unit ($56,000); water and sewer main extensions and replacements ($132,000); overpass ($350,000); fire station ($18,000).
2. Sewage disposal plant.
3. City Commission passes on all projects.
4. Proposed but not adopted in its entirety.
5. $100,000.
6. Yes. Not yet decided.

Staunton, Va.

WILLIAM A. GRUBERT, Mayor:

1. Increase in water system by enlarging storage reservoir ($200,000); incinerator ($60,000); by-pass ($200,000—with possible assistance by federal and state aid).
3. Powers invested in City Council.
4. No capital budget at this time on post-war planning. Council does not feel the need of such a budget until full information is received from the engineers on the above projects.
5. A substantial surplus carries over in the city's budget, recently completed, and there is a slight tax increase to create a post-war reserve.
6. No. But subject still being discussed by Council.

Sumter, S. C.

J. A. RAFFIELD, City Manager:

1. Water extensions; sewer extensions and disposal plant; street paving; storm drainage.
5. Only a small surplus, but we owe practically nothing and plan a bond issue. Plan also to apply for federal funds, if available.
6. Yes. Nothing definite decided, but it will not be a monument unless present thought is changed—which now favors a building or park.

Texarkana, Texas

WILLIAM V. BROWN, Mayor:

1. Much streeet repairing is needed.

Vancouver, Wash.

MARVIN E. RAY, City Engineer:

1. Improvements to municipal water system ($540,000); storm and sanitary sewers ($3,000,000); street construction ($1,000,000); fire station ($100,000).
2. Plans completed for water improvements, with some work now under way; sewer and street plans now under way; fire station plans completed.
3. Planning Commission now engaged in producing plans of general civic development to be outlined in a report.
5. $301,600.

Vandergrift, Pa.

JOSEPH F. BUCCI, Chairman, Post-War Planning Committee:

1. Sewers; streets; parks; playgrounds; stadium. Approximate cost of streets is $300,000, other figures not yet available.
2. Streets.
3. Preparing program for Council's final approval.
5. $20,000.
6. Yes. Undecided.

Warren, Pa.

R. R. W. STEBER, Burgess:

1. Completion of sewage disposal system.
2. Plans for the above completed.
3. Commission has not been active.
6. Recreation field under consideration. Nothing definite decided.

Waukesha, Wis.

W. E. DICK, City Engineer:

1. Hospital addition ($327,000); community building; parks ($90,000); roads and streets ($1,435,000); 6 school buildings ($575,000); bathhouse and pool ($40,000); incinerator $25,000); municipal garage addition ($31,000); 2 fire stations ($64,000); library addition ($5,000); sewers and sewage disposal plant ($491,500); water-distribution pumping station ($50,000).
2. Hospital addition and sanitary sewers.
3. All public improvements must be approved by the Planning and Zoning Commission.
5. $40,000 reserve for hospital addition and $50,000 for water pumping station. Also a $229,000 Bond Retirement Fund.
6. Yes. Community Building.

Westchester, Pa.

JOHN S. GROOF, Secretary:

1. Incinerators; streets; water and sewer extensions.

Woonsocket, R. I.

AURIUS PRECOURT, Acting Commissioner of Public Works:

1. Storm and sanitary sewers ($597,611); incinerator ($110,000); street widening ($800,000); grade crossing elimination ($250,000); underground fire alarm system ($35,000); fire station ($65,000); additional water shed ($3,400,000); distribution reservoir ($125,000); filtration plant ($200,000); 6 schools ($320,000).
2. Storm and sanitary sewers; underground fire alarm system.
3. Recommendation only.
5. $300,000.
6. Yes. Undecided.

York, Pa.

JOHN L. SNYDER, Mayor:

1. New buildings ($75,000); storm sewers ($65,000); improvements to disposal plant.
2. Buildings and sewers.

Jobs for Veterans Through Needed Public Works

From an address by Mayor Francis H. Wendt, of Racine, Wis., to the Common Council of that city, on April 17, 1945:

One of the great responsibilities which must be assumed by all of us is the proper guidance and placing in employment of the men and women who have served their country during the war. Some time ago I sponsored the creation of a central clearing house to assist returning veterans with their problems. . . . This veterans' office is functioning well. That alone, however, is not sufficient. These men and women have every right to expect gainful employment when they return.

To take up the slack in unemployment and also to give the city much needed public improvements I ask your honorable body to earnestly consider a substantial public building program, a large part of which should consist of outlining a comprehensive and connected highway system for the city, and developing a paving program covering all of our main thoroughfares. Such a program will be submitted for your consideration at an early date. It is also important that we make vast improvements to our storm and sanitary sewer systems.

"A ride I really Enjoy!"

TROLLEY COACHES ARE COMFORTABLE!

WHY PEOPLE LIKE THEM

THEY'RE FAST—Quick acceleration and reserve power assure stop-and-go efficiency and top speed.

SMOOTH RIDING—No jerks or jars—no abrupt stops—just a smooth flow of controlled power.

COMFORTABLE—Unlimited electric energy provides excellent lighting and cold-weather heating.

QUIET—Powered electrically, trolley coaches are more quiet than any vehicle you have ever known.

CLEAN—There are no objectionable odors to annoy passengers.

DEPENDABLE—Unfailing power supply, rugged construction, simplicity of drive and control, assure reliable performance.

"The best ride I know of... It's restful and comfortable. I just relax, or read my newspaper, and before I know it, I'm downtown at my office."

That's the way Mr. Businessman feels about trolley coaches... he likes them! Trolley coach passenger volume has multiplied in 47 cities from coast-to-coast. These modern vehicles carry real "pay loads", on fast schedules, at low operating and maintenance costs. They earn a high percentage of net profit and are a credit to any city.

One big reason behind the public acceptance of trolley coaches is Westinghouse electrical equipment. The new Electrocam and the 1442 Series Motor assure the operator and the rider of smooth and dependable service. Our many years of engineering and manufacturing experience in the transit field are at your service. Call your Westinghouse office or write Westinghouse Electric & Manufacturing Company, P. O. Box 868, Pittsburgh 30, Pa. J-15101

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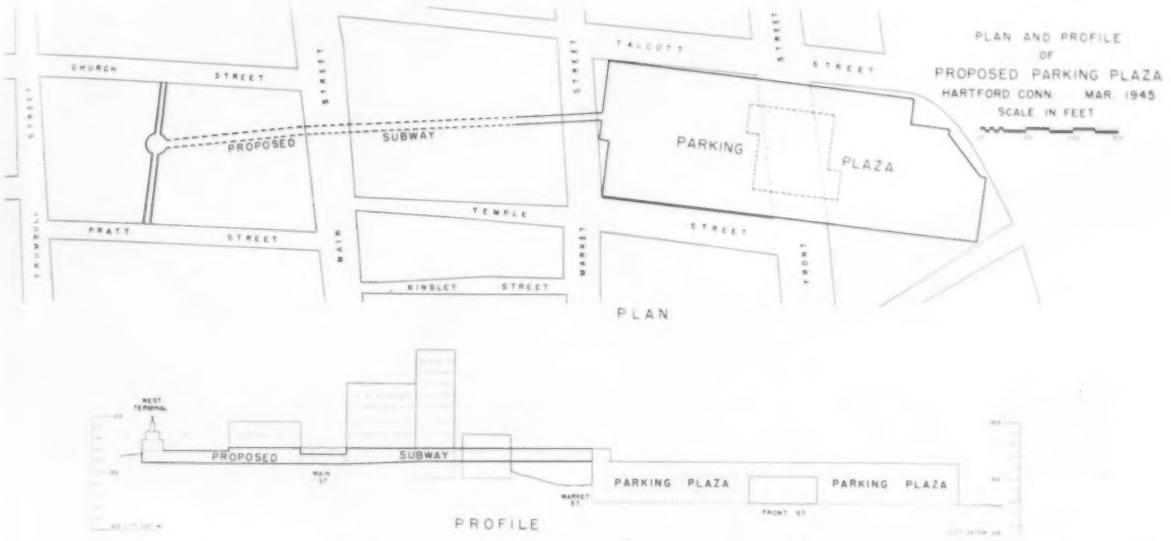
Traffic Control and Facilitation

Conducted by Traffic Control & Facilitation Committee, Institute of Traffic Engineers, 60 John St., New York

W. L. Robinson, Chairman; Donald S. Berry, Fred W. Fisch, Maxwell Halsey, Wilfred F. Irvin, Harry C. Koch, Philip S. Mancini, Claude N. Maurer, W. F. Milner, I. S. Shattuck, George M. Webb



The West Terminal and Parking Plaza showing proposed special train service for transporting passengers from the Parking Plaza to the business area of Hartford, Conn.

Hartford Plans an Attractive Parking Plaza

CITY Engineer Robert J. Ross has repeatedly advocated a super parking plaza for Hartford, Conn., as a means to help stabilize central real estate values and to add to the attractiveness of the city's business and shopping area. The Commission on the City Plan has been interested in traffic and parking problems for some time and working on a study for improvements. The press has commented on parking needs, the Chamber of Commerce has given the subject serious attention, and the general public has realized that improvements are in order. The comprehensive plan has now been completed and the following is a report to the city by City Engineer Ross.

A parking plaza must be accessible from all directions in order to be popular and to fulfill its purpose. A system of new express roads is agreed upon and assured, these being called the River Front Boulevard and the Park River Express Highway. The new Connecticut River Bridge is a link in this road system, and the road from the bridge through the South Meadows connecting with the Berlin Turnpike, which is now in use, is another part of the system. Without a favorable highway system, the parking plaza could not be a success.

Capacity of 10,000 Cars per Day

The plaza would provide three floors, all inclosed, and a roof. The structure between Talcott and Temple Streets would accommodate 2,500 cars at any one time or, if extended, a total of 3,300 cars. With a conservative turnover, up to 10,000 cars could be taken care of per day. It would be convenient for all traffic coming from the south or across both bridges from the east and also from the north. It would not be as convenient, however, for traffic coming from the west. This traffic is considerable and must have some provision made for it. It may be that financial assistance from state or federal funds can be had for such planned improvements. A new artery, together with the boulevards, would permit traffic from all points to get to and from the parking plaza conveniently, quickly and safely. In the formulation of tentative drawings of the plaza, motor entrances and exits tie in with city traffic lanes which approach this area.

Having brought the public to the parking plaza, it is then necessary to get them to and from central places of business. This particular accommodation is extremely important—perhaps the crux of the whole proposition—and the popularity of the plaza will depend largely upon the facilities provided. Small light-weight deluxe trains with electric battery motors would probably be the most logical. The cars would be attractive and designed to assure a comfortable ride. These electric trains would be in more or less continuous operation with on-and-off facilities at main stopping points. It is intended that the train would travel in an enclosure on the roof of the plaza, pass over Market Street, and in a subway under Main Street and to the terminal. This could be accomplished with practically level grades.

Train Service for Shoppers

Shoppers arriving at the plaza, either in their own cars or by bus, should be

The HOUR-METER—standard equipment on every "Caterpillar" Diesel Engine, Tractor and Motor Grader—is witness particularly to their stamina and long life. And the testimony it has collected over the years is a revelation!

The "Caterpillar" hour-meter records full "work hours." Driven direct from the crankshaft, its dial registers up to 9999 hours (which at one time users of power equipment considered a liberal serviceable life-span for a heavy-duty unit). But through their inbuilt soundness, hundreds of "Caterpillar" Diesels have multiplied in work hours the capacity of the meter.

At the right are a few of the notable hour records—as taken from latest available reports. Behind these records for long, dependable and economical performance is the outstanding "Caterpillar" dealer inspection, mechanical and replacement-parts service . . . plus "Caterpillar's" 40-year bank of track-type tractor experience, which no other manufacturer in its field commands.

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• Below are a few of the hundreds of "Caterpillar" Diesels that have already registered TWO TO FIVE TIMES "9999" working hours . . . and are still going strong.

Owner*	Classification	Hours
TRACTORS and MOTOR GRADERS		
S. V. Christierson	Farming	59,000
Heber W. Glenn	Farming	54,000
H. M. Thompson & Co.	Oil Field	52,520
Barogar Bros.	Farming	45,000
E. C. Von Glahn	Farming	38,000
Frank Colt	Farming	36,000
R. M. Jensen	Contracting	33,950
R. M. Jensen	Contracting	32,880
Oahu Sugar Co.	Farming	32,000
Hawaiian Pineapple Co.	Farming	31,017
D. A. Kessler Constr. Co.	Contracting	31,000
Gilbert Courtright	Farming	30,000
W. D. Annis	Contracting	30,000
ENGINES		
A. J. Krecker & Co.	Industrial	65,000
Denwood Oil Co	Industrial	60,000
Rosenthal & Carter	Oil Field	46,525
Mt. Emily Lumber Co.	Logging	43,000
Fairview Lt. & Power Co.	Industrial	35,000
Capparell Stripping & Construction Co.	Mining	33,600
Bolton Hatchery	Industrial	32,272
S. A. Murphy	Oil Field	30,240
M. DeRomo	Contracting	28,000
W. E. Johnson	Industrial	26,616
Bridgeport Oil Co.	Oil Field	26,320
M. O. Weaver, Inc.	Contracting	25,600
Massaponax Sand & Gravel Co.	Industrial	25,000

*Addresses on request

CATERPILLAR DIESEL

REG. U.S. PAT. OFF.

ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

privileged to use this train service. A walk would be provided along the electric train route whereby those who wished could make the trip on foot.

At each motor entrance or exit, the patron's car could be taken or delivered by attendants. The cashiers would also be located there, thus eliminating danger to the patron from walking about the parking area. Escalators to all floor levels above the ground floor afford connections to the horizontal walk and tramway.

The west terminal of the above walk or tramway is circular in form and two stories high, with wide circular stairs connecting the subway level with the upper level. The upper level is at street grade and is connected to the streets by a covered concourse.

Throughout the length of the subway and concourse there would be either display windows or small concession booths. On Market Street, at street level, a main waiting room is proposed which would be of an imposing design with such appointments necessary for the comfort and convenience of the patrons as rest rooms, waiting rooms, and concessions. Escalators would connect this unit with all levels, including the tramway. Secondary waiting rooms and rest rooms are at the bus terminals, and are connected by escalators to the tramway at the roof level. Convenience, attractiveness and comfort would be stressed so that a shopping trip would be a pleasant experience.

The circulating passenger service could be handled so that no section profited at the expense of another.

That the Pedestrian May Not Become Extinct

WITH pedestrian fatalities the major traffic toll in cities—the larger the city the greater the percentage of pedestrian deaths—1944 saw many ingenious efforts on the part of traffic engineers and police to stop these casualties. In reports submitted to judges of the National Pedestrian Protection Contest sponsored by the American Automobile Association, hundreds of engineering, educational and enforcement activities were described.

For the most part, traffic engineers complained that shortages of help prevented them from doing the many things they would like to do. Many stated that they had plans already prepared for pedestrian protection facilities to be constructed as soon as materials and manpower are available. Below are typical examples of current activities.

Overpasses were erected at three new plants in San Diego, and crossing the street at other than intersections was forbidden.

San Diego Pedestrian Overpass

San Diego recently solved a serious pedestrian accident situation by forcing employees to use concrete pedestrian overpasses at three large airplane plants. A wire fence had been erected previously along the center lane between intersections to keep pedestrians from crossing. Three overpasses were constructed at the three major gates. Intersections at minor gates had been furnished with traffic-actuated signals and pedestrian controls.

Since each of the aircraft factories were separated from its parking lot by Pacific Highway, which carries heavy traffic, probably 30,000 of the 40,000 employees were compelled to cross the highway going to and from work. While most of the pedestrians used the overpasses, those in a hurry were crawling under the center line fence or climbing over it in an effort to reach the bus stop or parking lot. These acts occurred during periods of peak traffic and several fatalities occurred. After considerable education of workers through plant loudspeaker systems, etc., repainting of all signs and crosswalks and direction signs to the overpasses, the City Council adopted an ordinance making it unlawful to cross this roadway at other than a crosswalk or overpass.

Stencilled Pedestrian Warnings

In western Pennsylvania, School Safety Patrol members aided local traffic authorities in stencilling safety signs and footsteps on the sidewalk. The Western Pennsylvania Safety Council issued a booklet of instructions on how to use the stencil and paint the footprint symbol, thus encouraging children to cross only at the proper intersections. It was suggested that the footprints lead from the school exits to the stencilled intersection, persuading children to avoid unauthorized crossings.

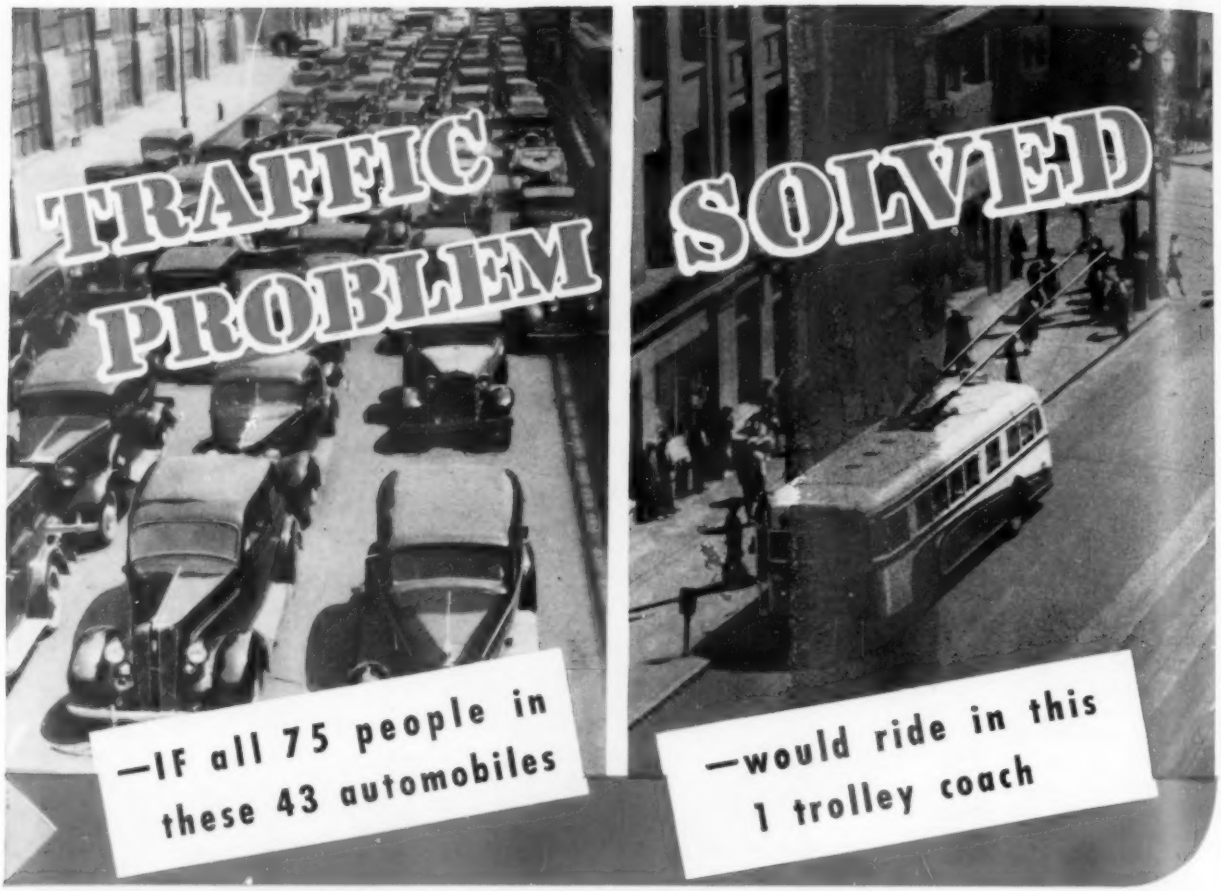
Off-Street Bus Lanes

Off-street bus loading and unloading lanes have proved particularly valuable at the entrance to the United States Signal Corps Arlington Hall installation, three miles out of Washington, D. C.

Thousands of crossings are made daily over Lee Boulevard which carries fast, heavy traffic. But turnouts were constructed by Arlington County, and fences were erected to keep crossings to the marked crosswalk. For night guidance, a controlled signal and a 100-lumen sodium vapor lamp were placed.

Accident Locations Marked

Pedestrian accident locations in Wilmington, Del., are stencil marked on



IN ATLANTA, the number of passengers nearly doubled during the war, but only 23 per cent more of these big, fast electric trolley coaches were needed to handle the loads. Thousands of automobiles would have been required to do an equivalent job, taking up 18 times the street space per passenger.

YOUR traffic problem would be solved if all the people riding in automobiles rode in public transit vehicles. All traffic would move much faster. Everyone would get where he's going more quickly. There would be fewer accidents. No parking problem. Perhaps you could reduce your traffic police force. The city's entire circulation system would be toned up, insuring easy accessibility, sound growth, stable property values, and steady tax receipts in every section of the community.

Of course, everyone cannot ride in transit vehicles. But much less practical is any plan based on one-hundred-per-cent *private* transportation. Street space would have to be multiplied many times and the cost would be astronomical.

The future good health of your city depends upon good circulation, and good circulation depends upon a healthy transit system. Work closely with your transit company, and make an important part of your planning the ***moving of people first, rather than vehicles, over your existing streets.*** You'll obtain the best service for the greatest number at the lowest cost to you, to the passenger, and to the taxpayer. ***General Electric Company, Schenectady 5, New York.***

Team Up with Transit—You'll Pep Up the Lifestream of Your City!

GENERAL ELECTRIC

BUY WAR BONDS

the streets, being brought up to date weekly. A pedestrian injury is designated by a white circle carrying the letter "P." A fatal accident involving either a pedestrian or motorist is indicated by a 24-inch yellow circle with a cross in the center. This has been valuable in helping to educate Wilmington drivers and pedestrians to safer practices.

What Color Traffic Lines?

A definite trend for the nation-wide use of white center lines and yellow barrier lines is indicated by a study recently made by Harry Porter, Jr., Traffic Engineer, National Safety Council, of state uses of white, yellow and black paint for pavement markers. Only 7 of the 48 states use yellow for center lines. The most common use of color for center lines is white on black top and brick surface, and black on concrete surfaces. Twenty of the 48 states use this combination. Seventeen states use white for center lines, regardless of the type of road surface.

Twenty-nine states or 60 percent use yellow barrier lines, while 13 states use white. Of these 13 states, 5 use a broken white line which changes to a solid white line to indicate a barrier or no-passing zone.

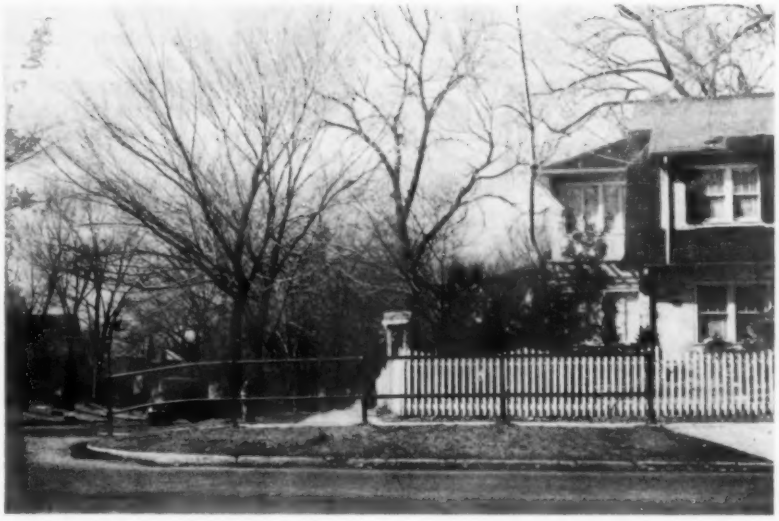
Since the war, several states have changed from yellow to white center lines. A few of these states may, after the war, go back to yellow when it is again available. A yellow barrier line has more attention value then other colors and the effectiveness of yellow is greatly increased when used alongside a white or black center line.

Trolley Coaches to Market in Wilkes-Barre

WILKES-BARRE, PA., the largest city on the Susequehanna River, is the center of the third largest population in the state of Pennsylvania. With a population of less than 100,000 it has become the social and shopping center for 250,000 persons in surrounding boroughs linked by fast, noiseless, trolley coach service into Wilkes-Barre.

The modern "highway liner" has cruised among these separate communities since 1940, says the Ohio Brass Company of Mansfield, Ohio, when service started as part of a million-dollar expansion and modernization program. The mass transportation system operated by the Wilkes-Barre Railway Corporation originated in 1866 with a horse-car railway between Public Square and the Kingston borough station of the old Lackawanna and Bloomsburgh Railroad. By 1935 a general rehabilitation of the system was planned in order to place transit operation on as sound a financial basis as possible. A study of maintenance and operating costs on systems in midwest cities operating trolley coaches resulted in a plan to include all three types of transit vehicles.

This is how it was decided that the people of Wilkes-Barre and its borough suburbs were to enjoy the comfort and convenience of trolley coach service. Because of the war and its resulting restrictions, it became necessary to postpone the modernization of other routes. Wilkes-Barre's 33 trolley coaches were installed: 17 in 1940, 6 in 1941, and 10 in 1942. The improvement will proceed when the war is over, with further developments based on the experience and observations of these war years.



Even in residential areas at hazardous intersections, some cities are erecting pedestrian barriers such as this one in Evanston, Ill.

Traffic Survey Made in Salem, Ore.

URGING that the City Engineer of Salem, Ore., be assigned the responsibility for traffic engineering there, a comprehensive traffic report has been submitted to the Salem Common Council by Harry Porter, Jr., Traffic Engineer, National Safety Council. It is suggested that the city engineer have or develop qualifications necessary to apply techniques and principles of this branch of engineering. Practical ways in which smaller cities can derive benefits from traffic engineering practices are shown in the report.

A plan of main arteries to link the downtown section with residential areas, forming a pattern similar to spokes of a wheel, is suggested. It is pointed out that Salem now has wide streets and should control or prohibit parking along principal streets to allow at least four moving traffic lanes. Elimination of angle-parking is recommended.

Based on a summary of traffic enforcement standards of other cities, Salem should have 10 to 15 police officers assigned to traffic control duties. Cities from 25,000 to 50,000 population should have full-time equivalent of at least 4 traffic officers from each 10,000 population, according to National Safety Council studies.

A strong plea for off-street parking facilities is made, the report calling on merchants and businessmen of Salem to recognize the importance of adequate parking facilities and asking support for their promotion and possible financing.

Parking Meter Revenues for 14 Cities

THERE were 14 cities throughout the country that received a revenue of over $100,000 from parking meters in 1944. These cities were: Cleveland, Columbus, and Toledo, Ohio, Portland, Ore., Denver, Minneapolis, San Diego, Memphis, Dallas, Fort Worth, Houston, Salt Lake City, Seattle, and Spokane. Approximately 449 cities now have parking meters.

World War I memorial.

Give them a memorial that lives

They fight for an ideal—and the ideal revolves around their own home towns, and the future of their families. This ideal can best be perpetuated by a memorial that benefits these families, and typifies a practical peace.

A memorial that will aid the future of their families day after day, is a Public Safety Lighting System. It will provide greater individual freedom, safety after dark, safety from traffic accidents, burglaries, robberies and property damage.

This memorial will also be a reminder of the administration that abolishes darkness . . . the darkness which encourages delinquency, breeds crime, complicates police work and undermines public confidence.

Many cities are today studying this problem with the aid of Westinghouse street lighting engineers who have years of experience in this work. These engineers are equipped with information and data from many cities and towns, much of which applies to your own problem.

The story of good Public Safety Lighting is graphically told in a new Westinghouse book that contains facts helpful to civic leaders. Ask your electric power company for your free copy of "Target for Tonight" or write Westinghouse Electric & Manufacturing Company, P. O. Box 868, Pittsburgh 30, Pa. There's danger in darkness . . . but safety in light. J-04031

For World War II—a Public Safety Lighting System will memorialize better living . . . safety for the individual . . . the end of brutalities that flourish in the darkness. It will symbolize an enlightened world, an end to blackouts forever.

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Public Safety Lighting

Outdoor Lighting

STREETS AND HIGHWAYS

"Boulevards of Light" as War Memorials

By **ROBERT P. HUMMEL**
Mayor, Bellevue, Ky.

SOMEDAY the Pearl Harbors and Dunkirks, the Belgium Bulges and Iwo Jimas will join the memories of other wars. Our sons, brothers, friends and companions will come home, down the gang planks in New York and San Francisco, back to the filling stations and corner drug stores in "our town."

Of course we'll welcome them with open arms, have our own little neighborhood celebrations at which Joe and Jim and Charlie will be wined and dined and made to feel like the conquering heroes they are. We'll want to build memorials to their deeds and to their comrades left on the battle fields of the world.

In towns and cities all over America grateful citizens will urge the erection of triumphal arches, heroic statues, plaques and monoliths, parks, highways, mountains; and real-estate subdivisions will be named in honor of the fighting men of World War II.

There is one thought for a great and lasting war memorial not hitherto given publicity. It is for the installation of a "Victory Way of Light"—a white way running from one end of town to the other, and dedicated to the community's citizen-soldiers who fought and died that the lights might shine again all over the world.

These boulevards of light might begin to sparkle all over the world. Visitors and tourists will enjoy entering these towns and cities at night and traveling over each community's white ribbon of triumph, along its avenue of heroes.

These boulevards of light will become the national standard of outdoor traffic safety lighting. Properly installed, they will serve as a yardstick by which other communities can determine whether or not their principal streets are properly lighted for safety, security and convenience after dark.

Other benefits will be those naturally associated with all adequate street lighting. The street will benefit the merchants of the community by attracting out-of-town buyers, by extending the "daylight" hours, and by encouraging night window-shopping. It will attract desirable new citizens, and aid the police. It will reduce night-traffic accidents, crime and juvenile delinquency, and increase real-estate values.

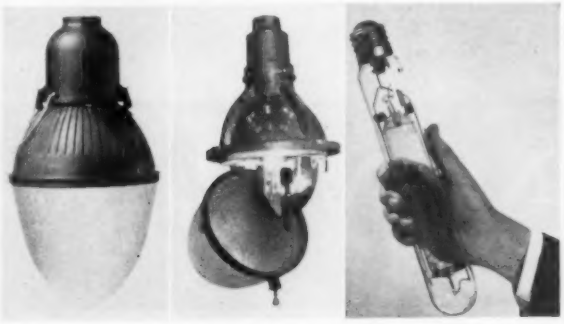
Each tall steel light standard might be named after a citizen-soldier of World War II; or it might be used to commemorate one of the battle actions in which the men of the community had participated—the invasion of Luzon, the battles of Hurtgen Forest, Salerno, Guam, Kiska. Or each light standard might carry the emblem of a different company or division with which the fighting men of the community had been identified. Better still, an enduring bronze plaque on each lighting standard with the individual names of the boys and girls of each community will be a lasting memorial. There are almost unlimited possibilities to the idea. But the greatest and most obvious benefit is that, over and beyond all monuments of stone or bronze ever erected, the monument of light gives life, hope and comfort to the living, while it pays constant tribute to the honored dead, symbolizing the spirit of enlightenment in our land.

British vs. American Highway Lighting

By **R. M. SWETLAND**
General Electric Co.
Illuminating Laboratory
Schenectady, N. Y.

IN contrast to Great Britain's expected post-war highway lighting practice (see THE AMERICAN CITY, February 1945, page 111) the tendency in America appears to continue in favor of incandescent or sodium light sources and constant-current series circuits.

On a three-lane highway, our recommended mounting height and arrangement are similar to those of the British, namely a 25-foot mounting height, staggered arrangement of luminaires, and a 5- to 7-foot overhang from the curb.



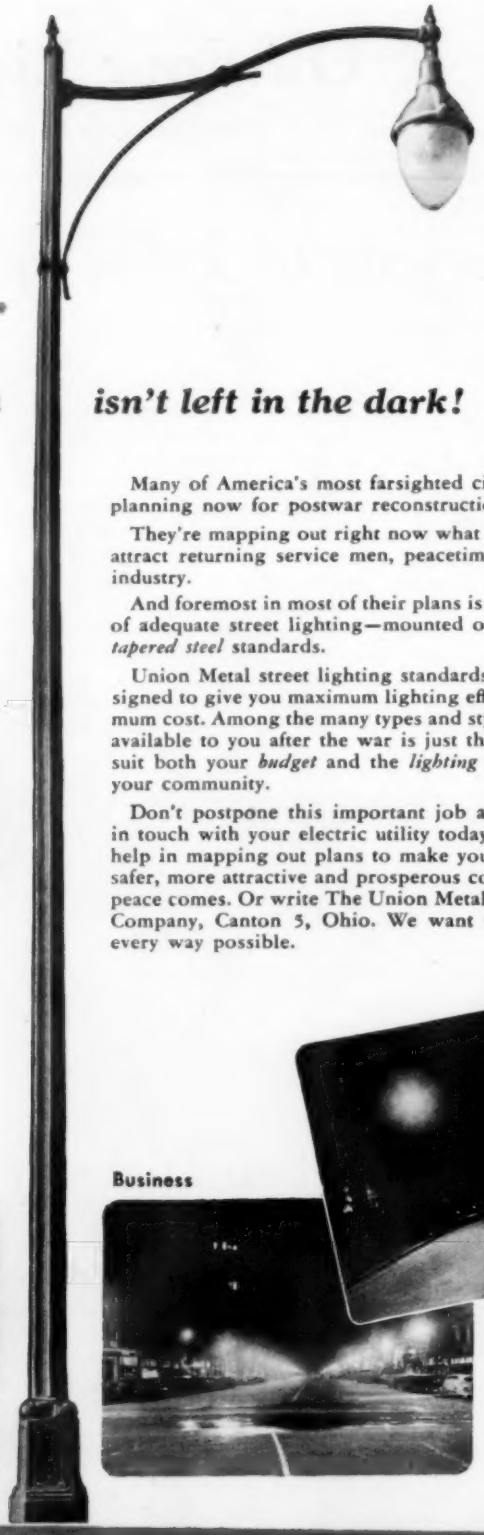
LEFT: *Luminaire designed for use with 400-watt mercury lamp.* CENTER: *Exposed view of mercury lamp and deflector.* RIGHT: *Mercury lamp.*

Typical reflector-type sodium luminaires, using 10,000-lumen sodium lamps and spaced approximately 200 feet linear, should have an annual operating and maintenance cost per mile of $950 to $1,100—compared with $3,000 per mile mentioned for the British mercury system. This sodium system would be supported by distribution poles and mast arms and energized from an overhead 6.6-ampere series circuit.

The initial investment cost per mile of such a system should be from $4,500

When the lights come on again all over the world...

Make sure your town isn't left in the dark!



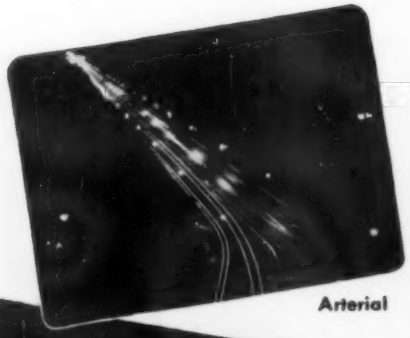
Many of America's most farsighted civic leaders are planning now for postwar reconstruction—are you?

They're mapping out right now what they will do to attract returning service men, peacetime business and industry.

And foremost in most of their plans is the installation of adequate street lighting—mounted on Union Metal *tapered steel* standards.

Union Metal street lighting standards have been designed to give you maximum lighting efficiency at minimum cost. Among the many types and styles that will be available to you after the war is just the right kind to suit both your *budget* and the *lighting requirements* of your community.

Don't postpone this important job any longer. Get in touch with your electric utility today and secure its help in mapping out plans to make your community a safer, more attractive and prosperous community when peace comes. Or write The Union Metal Manufacturing Company, Canton 5, Ohio. We want to help you in every way possible.

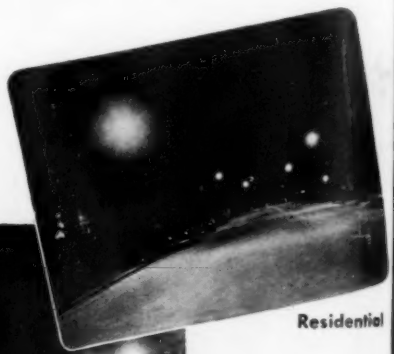


Arterial

Highway

Bridges

Business



Residential

UNION METAL

Largest Producers of Street Lighting Standards

A highway near Chicago lighted with General Electric sodium luminaires. A man changing a tire is clearly visible.

to $4,800—compared with $9,167 for the described British installation. The average calculated illumination over the pavement would be about 0.42 foot-candles. Assuming that 16,000-lumen mercury lamps are used in the British system, illumination derived from the latter would be about 0.8 foot-candles.

A characteristic American refractor-type incandescent luminaire, using a 6,000-lumen series lamp, connected to an overhead series circuit such as the one outlined above and spaced approximately 175 feet linear per unit, will produce pavement illumination of about 0.41 foot-candles. Initial investment cost per mile should be between $3,800 and $4,000, with an annual operating cost per mile of from $900 to $1,000. (The energy cost figured for the American system is 1.5 cents per kwhr, with an annual burning schedule of approximately 4,000 hours.)

Brownout Saves Chattanooga 50 Tons of Coal Per Week

By W. G. DAVIES
Electric Power Board
Chattanooga, Tenn.

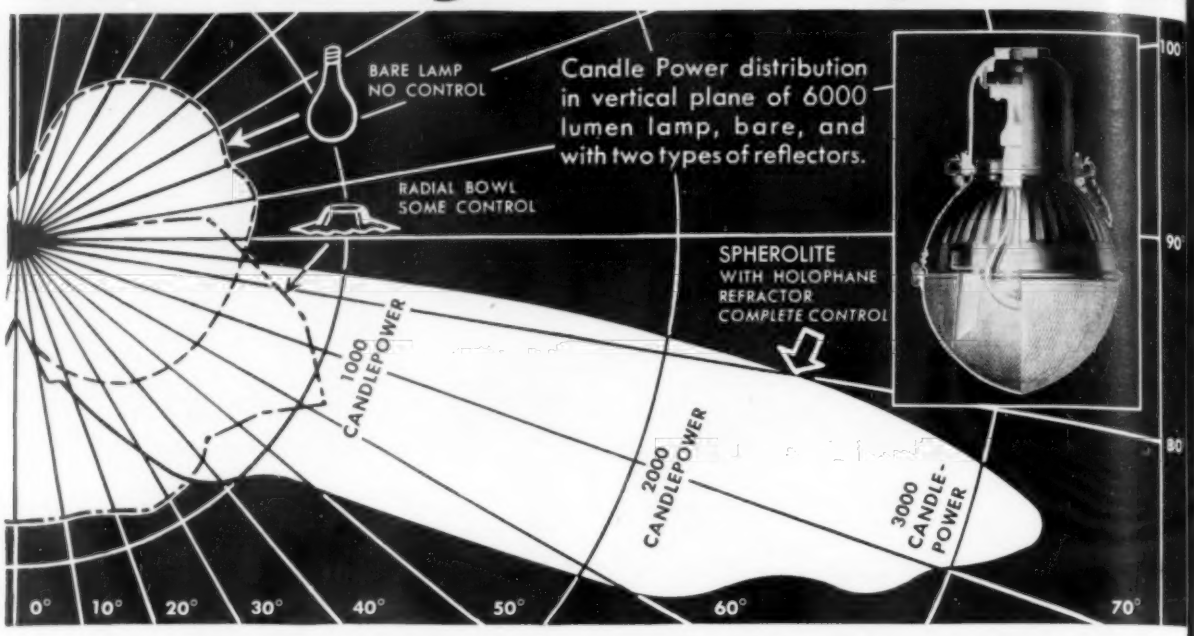
A main street in Chattanooga showing lighting before and after brownout lighting was put in effect.

CHATTANOOGANS have been cooperative in observing War Production Board U-9 order covering the electric brownout, as they have been in all other war emergency regulations. A look at Market Street is enough to convince anyone of the wholehearted support merchants have given the government's mandatory order.

Much work has been done by the commercial division of the sales department, Electric Power Board, in acquainting customers with government regulations. Since we want all our customers to be fully informed, we have given many preliminary warnings. It has been found that they appreciate having prohibited uses called to their attention in a friendly, unofficial manner during an educational period.

A study was made of the load on a Chattanooga downtown circuit which mainly supplies stores and office buildings on Market and Broad Streets. Figures for the week of February 3 to 9 after the brownout were compared with figures for the week of January 3 to 19 before the brownout.

"AIM" the light...with Spherolite



GET THE LIGHT WHERE YOU NEED IT—FOR SAFETY!

Safety and protection demand maximum use of the illumination available from any street lighting system. Obviously no one today uses bare lamps—they waste too much light. Why not go all the way—and get the complete control Spherolite offers?

Spherolite puts the light where it's needed. None is wasted in the sky, or on second stories. Immediately below the light—the closest point—where most reflectors put the greatest intensity, Spherolite reduces the light, saving it for the more distant areas. This is accomplished by the scientifically designed reflector and refractor.

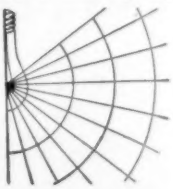
Get the details on this and the complete line of street lighting equipment Line Material offers.

ASK THE L-M FIELD ENGINEER

This man has wide experience in solving street lighting problems. He may be able to help you. Ask him for this Bulletin 4432 on the Spherolite. Call or write the nearest L-M Branch Office, or Line Material Co., Milwaukee 1, Wisconsin.

HOW THE CHART WORKS

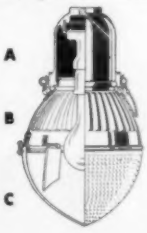
The chart above is a convenient way to compare the distribution of light at various angles by a bare lamp, a radial bowl, and a Spherolite with Holophane Refractor. Chart is scaled in degrees of angle from the vertical (below the lamp). Horizontal is 90°. Light intensity of each lighting device, at the various angles, is plotted, resulting in the three distinct patterns shown. Light from a bare lamp has, of course, no control. It shines almost equally in all directions. With a radial bowl reflector, much less light is wasted. But it is not well distributed. The highest intensity is immediately below the lamp.



HOW SPHEROLITE AIMS THE LIGHT

Spherolite distributes the light more uniformly over a larger area. The nearest point, immediately below the light, will be only a little brighter than a point 60 feet away; but the intensity directed toward the 60-foot point is just about six times as high as with the bare lamp, or five times as high as with the radial bowl reflector.

Cutaway shows Spherolite construction. "A"—die-cast aluminum hood containing the socket; "B"—scientifically curved fluted Alzak aluminum reflector; "C"—Holophane glass refractor, or may be a diffusion glass globe, depending upon kind of control required. Get details of this and other L-M Street Lighting Equipment.



LINE MATERIAL
STREET LIGHTING EQUIPMENT

L-M DISTRIBUTION EQUIPMENT INCLUDES: Distribution Transformers · Fuse Cutouts and Fuse Links · Lightning Arresters Oil Switches · Pole Line Hardware · Line Construction Specialties · Underground Equipment · Fibre Conduit · Street Lighting Equipment

Street Lighting Facts in Jamestown, N. Y.

STREET LAMPS INSTALLED:

Jamestown:	1944	1943
10,000 lumen Suspended—Series Mazda Incandescent	1	1
6,000 lumen Suspended—Series Mazda Incandescent	377	375
2,500 lumen Suspended—Series Mazda Incandescent	697	692
1,000 lumen Suspended—Series Mazda Incandescent	10	0
800 lumen Suspended—Series Mazda incandescent	52	54
150 watt Suspended—Multiple Mazda Incandescent	1	1
100 watt Viaduct—Multiple Mazda Incandescent	15	15
40 watt Viaduct—Multiple Mazda Incandescent	19	19
10,000 lumen Series Mazdas on Single Light Standards	201	201
6,000 lumen Series Mazdas on Single Light Standards	48	48
4,000 lumen Series Mazdas on Single and Multiple Light Standards	3	9
2,500 lumen Series Mazdas on Single and Multiple Light Standards	69	64
800 lumen Series Mazdas on Single Light Bridge Standards	42	42
40 watt Multiple Mazdas on 2 Five Light Standards	10	10

Service Classification No. 2—Rates for Suspended or Pendant Type Street Series Incandescent Lamps:

A.—Each 800 lumen, 6.6 ampere, Street Series Incandescent Lamp, all night service ..... $12.00 year

B.—Each 2,500 lumen, 6.6 ampere, Street Series Incandescent Lamp, all night service ..... 21.00 year

C.—Each 4,000 lumen, 6.6 ampere, Street Series Incandescent Lamp, all night service ..... 33.00 year

D.—Each 6,000 lumen, 6.6 ampere, Street Series Incandescent Lamp, all night service ..... 45.00 year

E.—Each 10,000 lumen, 6.6 ampere, Street Series Incandescent Lamp, all night service ..... 63.00 year

Rates for Ornamental Type Street Series Incandescent Lamps:

A.—Each 800 lumen, 6.6 Ampere, Street Series Incandescent Lamp, all night service ..... 9.00 year

B.—Each 2,500 lumen, 6.6 ampere, Street Series Incandescent Lamp, all night service ..... 18.00 year

C.—Each 4,000 lumen, 6.6 ampere, Street Series Incandescent Lamp, all night service ..... 28.00 year

D.—Each 6,000 lumen, 6.6 ampere, Street Series Incandescent Lamp, all night service ..... 39.00 year

E.—Each 10,000 lumen, 6.6 ampere, Street Series Incandescent Lamp, dusk to midnight ..... 33.00 year

F.—Each 10,000 lumen, 6.6 ampere, Street Series Incandescent Lamp, all night service ..... 54.00 year

Terms of Payment: Same as Service Classifications 1-A and 1-B.

LIGHTING SCHEDULE:

Street Lamps burn all night from dusk to dawn except viaduct multiple mazdas which burn twenty-four hours per day and 99 — 10,000 lumen Series Mazdas on single light ornamental standards that burn until midnight only.
Number of Hours of Street Lighting in 1944 ..... 4,000 hrs. 26 min.

THE city of Jamestown, N. Y., owns and operates its electric and water systems through the Board of Public Utilities. The electric plant was constructed in 1890 and street lighting service was established to 140 street lamps one year later. In 1928 the ornamental street lighting system of the central section of the city was completed. The annual reports for 1944 show that the Jamestown street lighting system used 2 percent of the total energy accounted for. Investment value of the street lighting system is given as $188,967. The operating cost for street lighting is given as $11,873, and the revenue charge was $45,090.

The 1940 population of Jamestown was 42,638 and there are 1,545 street lamps. Thus the unit revenue figures for 1944 were $1.06 per capita and $29 per lamp per year.

The Jamestown plant also supplies street lighting to the community of Falconer, population 3,233 and 177 street lamps; and Celoron, population 1,349 and 79 street lamps; and 3 lighting districts in the town of Ellicott. The revenue from the street lighting service for these three towns amounted to $33 per street lamp. The two tables show respectively the street lamps installed and the street lighting rates charged by the Board.

Alfred C. Davis is chairman of the Board of Public Utilities, Samuel A. Stroth, President, and Thomas J. McKee, Secretary. Superintendent of Public Utilities is Clayton O. Johnson.

Memorial Auditorium Proposed by Local Bodies for Erie, Pa.

ERIE, Pa., has the dubious distinction of being one of the few cities in the 100,000 to 500,000 population bracket which have not yet provided suitable facilities for public gatherings, according to a survey made by the *Erie Daily Times*. Erie not only does not like this doubtful honor but it is now feeling the pinch of having no place where events of general public concern and appeal can be held.

And so Erie's Inter-Club Council and the Billy Simpson Post, No. 470, have been stirring about actively on behalf of an all-purpose auditorium to be built as a living memorial to the men and women serving in World War II.

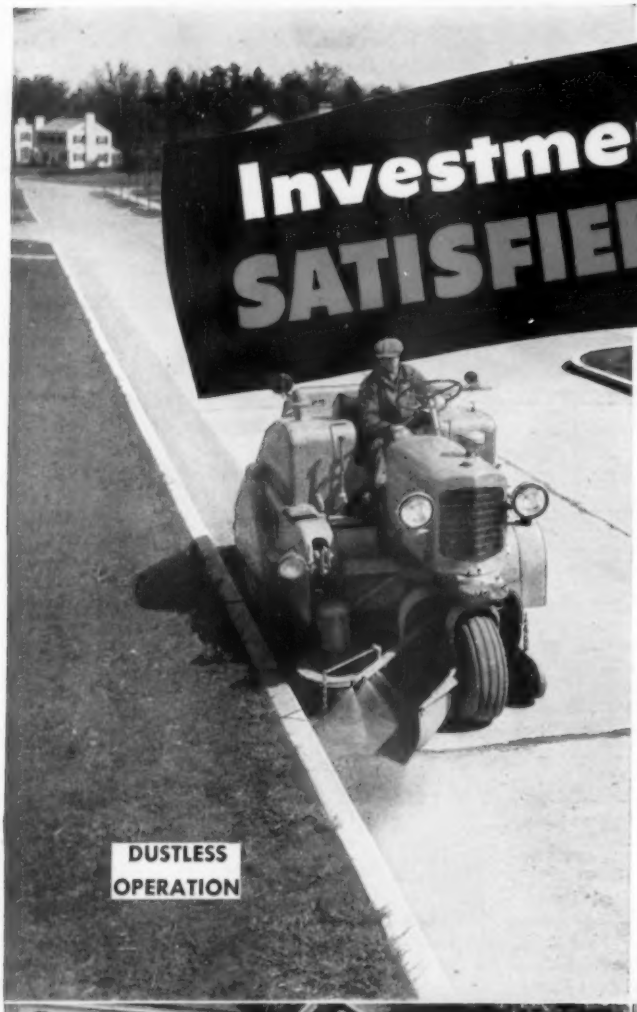
The *Times* has kept the project actively before the public and discussions have now reached the stage of considering possible ways of financing such a building, at the estimated cost of $600,000.

The following methods have been suggested: Entirely by public contributions; public contributions abetted by municipal appropriations; bond issues or tax increases, making municipal backing possible; combination of public contributions, with city, school district, and county appropriations; creation of an Auditorium Authority and amortized bond issue over a period of years.

Many years ago Toledo, Ohio, built an art museum toward which almost every man, woman and child in Toledo contributed. As years passed, the museum became increasingly a people's museum and today it occupies a unique position in the loyalties of Toledo citizens of all ages. Erie's public spirited promoters of the auditorium plan would like for every man, woman and child in Erie to make a similar investment in the auditorium.

In addition to the obvious need for the auditorium and its cultural benefits to the community, such a building would also afford considerable commercial advantages to the city since it would bring into Erie at times of public functions, and educational and reacretional events, an influx of population from Greater Erie with its population of 300,000.

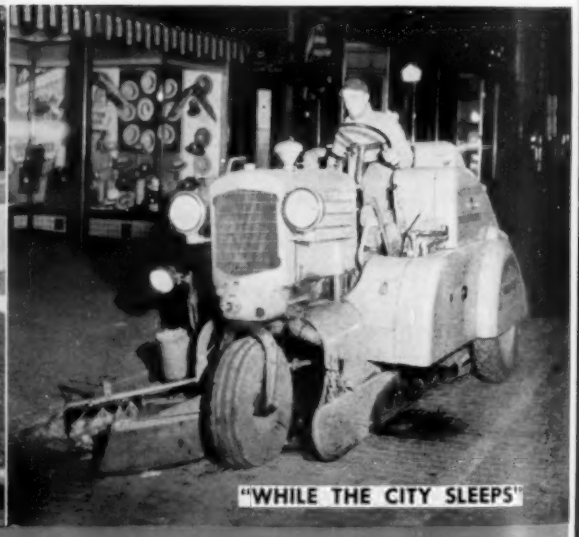
Investment in SATISFIED TAXPAYERS



• Housewives, storekeepers and property owners in general . . . Health Department, Chamber of Commerce and Woman's Club . . . all satisfied because they see what they are getting for some of their tax money . . . see tangible results in a cleaner, healthier and more beautiful community.

Yes, for satisfied taxpayers there is nothing better than an Austin-Western Patrol Sweeper.

AUSTIN-WESTERN COMPANY,
AURORA, ILLINOIS



BUILDERS OF ROAD MACHINERY
Austin Western
SINCE 1859

BUY MORE WAR BONDS

Zoning and Planning Notes

Edited by FRANK B. WILLIAMS
Author of *The Law of City Planning and Zoning*

Airport Zoning

An Important New Jersey Case Discussed

NEW JERSEY.—Yara Engineering Corporation v. City of Newark, Supreme Court, January 8, 1945, reported in 40 Atl. 559.

The City of Newark has adopted an ordinance generally referred to as its "airport zoning ordinance." In its preamble it recites that its purpose is to regulate and restrict the height of structures and objects of natural growth . . . in the vicinity of the Newark Municipal Airport by creating airport approaches and turning zones. The legality of this ordinance is challenged by the Yara Corporation, which is the owner of certain parcels of vacant land within the airport and the Port Terminal adjacent to it.

The airport approach zones and turning zones provided for in the ordinance extend for about 2 miles from the landing field, which is called the inner boundary. No structure or tree may be erected or maintained within these zones in excess of certain heights ranging from 10 feet to 370 feet, the lower heights being in the zones nearest the inner boundary. Any use of land within a 2-mile radius which would create electrical interference with radio communication between the airport and aircraft, or make it difficult for fliers to distinguish between airport lights and others, or make any glare in the eyes of fliers using the airport, or otherwise endanger the landing, taking off or maneuvering of aircraft, is prohibited.

This area was classified as "second industrial" under the general zoning ordinance of the city prior to the adoption of the airport ordinance. The area was reclaimed swamp or salt meadow land, and its value, according to the Yara Corporation's expert witness, varied from $6,000 to $15,000 an acre, according to its location and the condition of the fill if usable for industrial purposes; but if restricted to the use of the airport ordinance, the value would only be nominal.

The New Jersey Constitution was amended to authorize the enactment of general laws premitting municipalities to adopt zoning ordinances. Under that authority the Legislature passed enabling acts, the purposes and essential considerations of which are as follows:

Such regulations shall be in accordance with a comprehensive plan and designed for one or more of the following purposes: to lessen congestion in the streets; secure safety from fire, panic and other dangers; promote health, morals or the general welfare; provide adequate light and air; prevent the overcrowding of land or buildings, avoid undue concentration of population. Such regulations shall be made with reasonable consideration, among other things, to the character of the district and its peculiar suitability for particular uses, and with a view of conserving the value of property and encouraging the most appropriate use of land throughout such municipality.

The Court's Decision

The Court finds nothing in this statute which authorizes the enactment of an ordinance for the zoning of land solely for the use of an airport, as this ordinance undoubtedly is. It concludes that this ordinance undertakes to zone without authority of any statute and is in fact the taking of private property without due process of law, in violation of the Fourteenth Amendment of the United States Constitution, and also the taking for public use without just compensation, in ivolation of Art. 1, par. 16, of the State Constitution.

The City, says the Court, is within its rights in acquiring property for airport purposes, by condemnation if necessary. To restrict the height or building of any structure or trees, or to interfere electrically with communication or impair visibility by lights, etc., or in any way to use property within 2 miles of the airport to endanger the landing or taking off, etc., of aircraft, as provided in the questioned ordinance, is an interference with the rights of property ownership, which is not within the contemplation or purpose of the zoning law. The City may not under the guise of an ordinance acquire rights in private property which it may only acquire by purchase or by the exercise of its power of eminent domain.

The ordinance is therefore set aside.

Note by the Editor of This Page

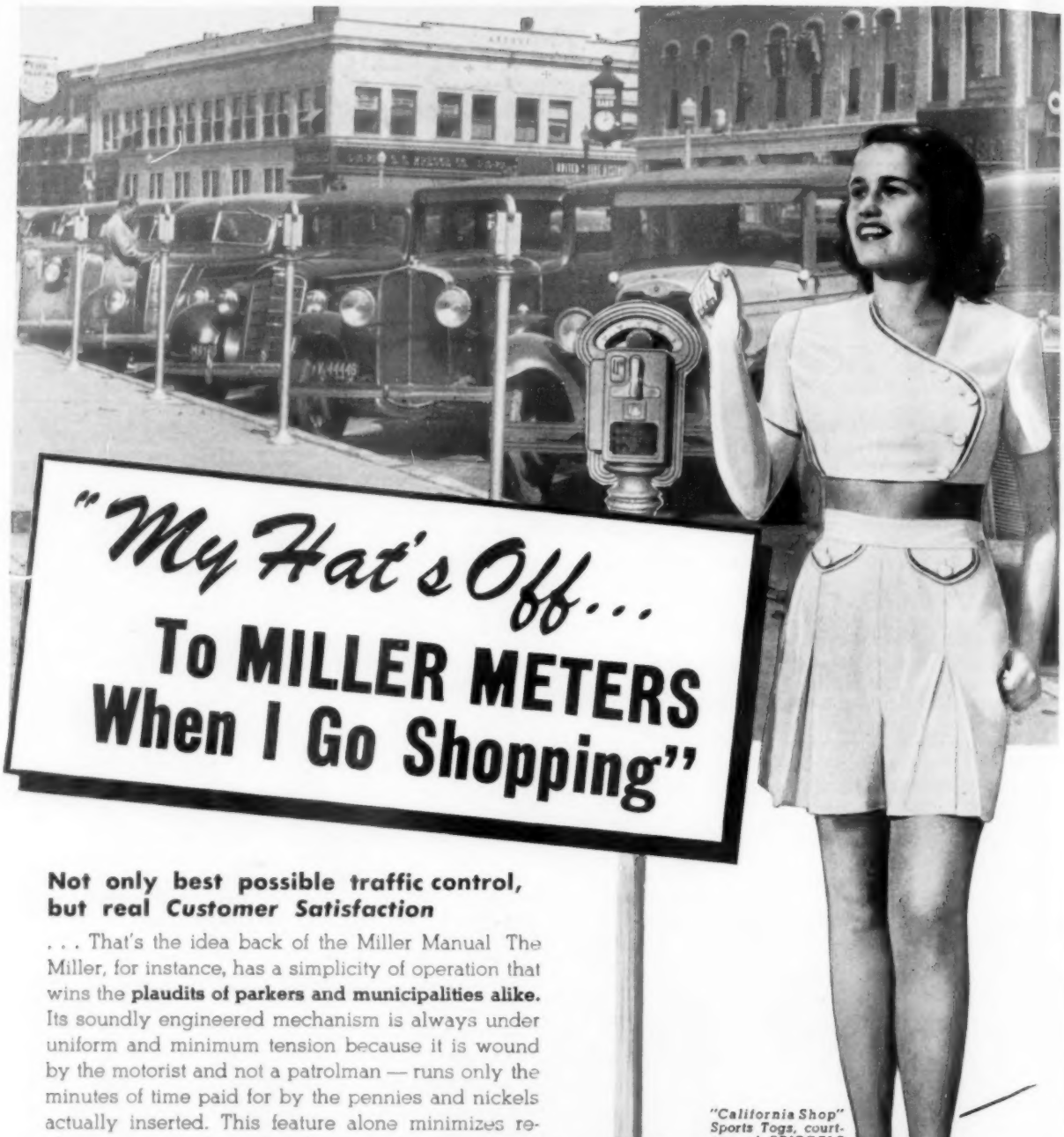
CAN an area on which there is an airport be zoned for airport use? Certainly, and it should be so zoned; aviation is a most important use in such an area. Can it be zoned solely for such use, or without due regard for other uses in the area? Certainly not; this would be unfair to the other uses there. The fact that the airport is by far the most important use in the area does not make such zoning legally possible, because it is not reasonable or just to all the uses in the district. In the accomplishment of many public purposes, such as street traffic, private property must be paid for, if taken or damaged, whether the procedure by which this is attempted is called zoning or not.

It is a general rule that municipalities may legally pass zoning ordinances only if authorized to do so by the state in which the zoning power resides. The authorizing statutes are called enabling acts. The enabling act of New Jersey, in which state the case we are now considering was decided and the airport is located, recites that local zoning regulations must be "in accordance with a comprehensive plan . . . with reasonable consideration . . . to the character of the district and its peculiar suitability for particular uses" [not one, but all such uses] "and with a view to conserving the value of property and encouraging the most appropriate use of land throughout such municipality"—so that the plan may be truly comprehensive.

In so holding, the court is undoubtedly right. Obviously municipalities acting under a statute must conform to it, or their action is void, and to decide this case the court need go no further than to hold that the municipality has not in this instance done so. But the above recitals quoted from the enabling act are only a re-statement of what the law is and would be in the absence of such recitals; for the exercise of the police power, upon which zoning rests, to be valid must be reasonable, and would not be so unless there was a comprehensive plan distributing burdens and benefits equitably and generally among those affected by it. The court finds that in this case the regulations are so greatly in the interest of the airport that there is no such equitable distribution of burden, and that therefore the zoning ordinance before the court is void.

The case is in accordance with authority. (Maryland, *National Chemical Co. v. Mayor and City Council of Baltimore*, Circuit Court, Baltimore City, January 25, 1939.)

It should be noted that the Model State Airport Zoning Act, issued by the Civil Aeronautics Administration of the United States and the National Institute of Municipal Law Officers, November 7, 1944, does not advise municipalities so drastically to restrict other uses in the neighborhood of airports.



"My Hat's Off... To MILLER METERS When I Go Shopping"

Not only best possible traffic control, but real *Customer Satisfaction*

. . . That's the idea back of the Miller Manual The Miller, for instance, has a simplicity of operation that wins the **plaudits of parkers and municipalities alike.** Its soundly engineered mechanism is always under uniform and minimum tension because it is wound by the motorist and not a patrolman — runs only the minutes of time paid for by the pennies and nickels actually inserted. This feature alone minimizes replacement costs due to breakage . does away with all winding expense to the city. Result is: full time service, low maintenance, constant revenue from every meter on the job. For availability of Millers, for your city write today.

"California Shop" Sports Togs, courtesy of SPIEGELS 1945 Spring catalog

NICKEL PARKING
for long time shoppers
★
PENNY PARKING
for the "in-and-outer"

5¢ 1¢

Duncan METER CORP.

1500 SOUTH WESTERN AVENUE CHICAGO 8, ILLINOIS

Municipal Law Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, Washington, D. C.
Charles S. Rhyne, *Executive Director*

Appropriations—Lump Sum—Action by Taxpayer Against

In taxpayer's action attacking validity of lump sum appropriation in budget of New York City, held that facts were sufficient to constitute a cause of action where budget made lump sum appropriation for motor vehicle equipment, repair parts, special machinery, unforeseen expenditures and sundry expenses. *Wilmerding* v. *LaGuardia*, 52 N. Y. S. (2d) 169 (N. Y. Sup. Ct. App. Div. Dec. 22, 1944).

Bridges—Automobile Skidding on Icy Tread Planks—Negligence in Construction of Bridge

Question of highway district's negligence in construction of bridge and failure to have guard rails and warning signs near culvert, and in permitting eroded cuts in sides of road was for jury where automobile skidded on icy longitudinal tread planks of bridge and after traveling about 50 feet, skidded off roadway into canal near culvert. *Mason* v. *Hillsdale Highway Dist.*, 154 Pac. (2d) 490 (Ida. Dec. 20, 1944; Reh. Den. Jan. 15, 1945).

Ceiling Prices—Ordinance Making It an Offense to Sell Above Federal Limitation—Not Invalid

Ordinance of City of Detroit which made it an offense to sell a rationed commodity without taking in exchange required coupons or to sell a rationed commodity at a price in excess of the ceiling price does not constitute an invalid "delegation of legislative authority," nor does it exceed the city's police power. *People v. Sell*, 17 N. W. (2d) 193 (Mich. Jan. 2, 1945).

Civil Service—Rule Against Outside Employment—Regulation Invalid

In action for an injunction restraining defendant from suspending or dismissing civil serivce employee on account of alleged violation of rule against outside employment, held that regulation against outside employment adopted by city department exceeds the powers conferred upon such department by the New York City Charter. *Putkowski* v. *Carey*, 52 N. Y. S. (2d) 42 (N. Y. Sup. Ct., N. Y. Co. June 27, 1944).

Diving Board—Injury Due to Slippery Condition—Danger Inherent and Obvious

In action to recover for injuries sustained by plaintiff when diving from a springboard attached to a municipal pier, held that slippery condition of springboard was incidental to its use and therefore plaintiff accepted the dangers that inhere in it so far as they are obvious and necessary. *Payne* v. *City of Clearwater*, 19 So. (2d) 406 (Fla. Oct. 13 1944).

Firemen—Right to Pension—Injury Received While in Army

In action to require defendants to grant plaintiff a pension under the Firemen's Relief and Pension Fund Act, held that fireman of City of Hot Springs who received injury while in the United States Army which disabled him from performing his duties as fireman was not entitled to a pension for disability. *McLaughlin* v. *Retherford*, 184 S. W. (2d) 461 (Ark. Dec. 18, 1944 Reh. Den. Jan. 22, 1945).

Fire Department—Governmental Function—No Civil Liability

Civil liability cannot be imposed upon a municipality for failure to supply its inhabitants with fire protection as this is the exercise of a governmental function. *Seitz* v. *City of Beacon*, 52 N. Y. S. (2d) 812 (N. Y. Sup. Ct. Dutchess Co. Apr. 15, 1944).

Housing Authority—Rent to Include Electric Service—Rate Same as That Charged City for Public Buildings

Where rent for housing authority apartment buildings was fixed on basis which included electric service which went through common meter and electricity was paid for by the authority or city, determination that buildings were entitled to be served with electrical energy by utility at same rate as charged by utility to city for public buildings does not violate discrimination provisions of Public Service Law. *State Island Edison Corporation* v. *New York City Housing Authority*, 52 N. Y. S. (2d) 639 (N. Y. Sup. Ct. Dec. 11, 1944).

Liquor—Complaint in Language of Ordinance Prohibiting Possession of—Sufficiency

Where complaint was phrased in language of city ordinance charging possession and sale of alcoholic liquor on certain premises in violation of ordinance it was sufficient as against contention that it did not apprise accused of the nature of the charge. *City of Seattle* v. *Demos*, 154 Pac. (2d) 597 (Wash. Dec. 20, 1944).

Nuisances—Chemical Plant—Failure to Allege Chemicals Not Essential to War

Under statute authorizing city to abate nuisance, bill by city alleging that defendants were operating a chemical plant in densely settled residential area and that plant fumes and unwholesome substances were omitted into the street was sufficient to establish a public nuisance notwithstanding bill did not allege that chemical compounds manufactured were not essential to the war effort. *National Southern Products Corporation* v. *City of Tuscaloosa*, 20 So. (2d) 329 (Ala. Dec. 21, 1944 Reh. Den. Jan. 18, 1945).

Policemen—Right to Veteran's Pension—Attainment of 62 Years of Age Before Retirement

In action to compel respondents to retire policeman of City of Hoboken on veteran's pension, held that he was not entitled to retirement under the Veteran's Act until he attained the age of 62 years, even though he was a veteran and had served the requisite 20 years with the police force. *Kelly* v. *Kearins*, 40 Atl. (2d) 345 (N. J. Dec. 29, 1944).

Riots—Limitation Period on Action for Damages by—Determination of

In computing three months' limitations on action against city for damages by mobs and riots, commencement of action January 3 was timely, where limitation period expired on January 1, a public holiday, and January 2 fell on a Sunday. *Butcher's Mut. Casualty Co. of New York* v. *City of New York*, 52 N. Y. S. (2d) 121 (N. Y. Sup. Ct. N. Y. Co. Mar. 14, 1944).

Sidewalks—Rocks on—Photographs—Time of Taking

Where plaintiff fell on loose rocks near the sidewalk and there was no evidence that the condition had been called to the attention of the city, held that the evidence supported a finding that the rocks had been there long enough to put the city on constructive notice and a photograph of the scene was held to be properly admitted in evidence where the witness testified that although taken after the accident, it portrayed the conditions as they were. *City of Anniston* v. *Simmons*, 20 So. (2d) 52 (Ala. App. Aug. 22, 1944).

Streets—Lights on Traffic Island—Five Minutes Actual Notice

In an action for damages sustained when an automobile struck an unlighted safety island at an intersection, where the court granted defendant's motion for judgment notwithstanding the verdict and there was evidence that the city had had about five minutes' notice that the light was out, held that there was insufficient evidence upon which to find the city negligent. *Ebert* v. *City of Chicago*, 58 N. E. (2d) 198 (Ill. App. Dec. 11, 1944).

Swimming Pools—Death of Infant—Failure to Provide Sufficient Guards

In action by widow to recover for death of her twelve-year-old son who drowned in a swimming pool operated by city, held that allegations that drowning was due to city's negligent failure to provide sufficient guards and to properly use water tower stated a cause of action. *Pickett* v. *City of Jacksonville*, 20 So. (2d) 484 (Fla. Jan. 16, 1945; Reh. Den. Jan. 29, 1945).

Taxation—Federal Public Housing Authority—Exemption

In an action by the Federal Public Housing Authority to enjoin the city and county from subjecting property held by the Authority for use as a low cost housing project to local taxes, held that the statutory exemption from taxation is in furtherance of the purposes of the federal legislation to promote the general welfare. *City of Cleveland* v. *United States*, 65 Sup. Ct. 280 (U. S. Jan. 2, 1945).

Taxation—Rural Electrification Lines Outside City's Limits—Exemption

In action to recover ad valorem taxes on rural electrification lines owned by defendant and extending through plaintiff school district, held that such lines were exempt from ad valorem taxation by such district as "public property used for public purposes." *A. & M. Consolidated Independent School District* v. *City of Bryan*, 184 S. W. (2d) 914 (Tex. Jan. 17, 1945; Reh. Den. Feb. 14, 1945).

Workmen's Compensation—Injury to Fireman's Heart Muscles—Accidental Injury

In proceeding for workmen's compensation for a fireman holding the rank of Captain, held that injury to fireman's heart muscles caused by exertion and excitement greater than is usual in the performance of his duties was an "accidental" injury within workmen's compensation. *Hiber* v. *City of St. Paul*, 11 N. W. (2d) 878 (Minn. Dec. 22, 1944).

Engineered for Service

The Best Friends of *Dual Automatic* PARKING METERS are the people who have used them

BEFORE the war 449 cities in 41 states had solved their parking control problems through the use of parking meters—and by far the greatest percentage of these installations were Duals.

As these prewar users learned, metered parking eliminates the all-day parker and gives everyone a chance. It increases parking turnover in busy downtown areas. It reduces double parking to a minimum, stops unnecessary cruising, and helps speed the flow of traffic.

All these advantages *and more* can be yours, too, as soon as materials become available and Duals can be manufactured again. In the meantime, get in touch with Dual. Find out for yourself why Dual is tops in popularity. Get Dual's engineers (without cost or obligation) to survey your needs and make recommendations for the future. But do it today—insure your share of America's foremost parking meters.

THE DUAL PARKING METER *Company*

Harter Bank Building
★
CANTON 2, OHIO

"Terre Haute Babies Are Gurgling with Glee!"

A PRACTICAL tie-up between a Chamber of Commerce and the public health activities of its city is in effect in Terre Haute, Ind., where the secretary of the Board of Health is chairman of the Chamber's Health Committee. Recognizing the fact that an unsafe milk supply may spread diseases such as undulant fever, scarlet fever, diphtheria, sore throat, typhoid, dysentery, summer diseases common to infants and many other diseases carried by impure milk, the Chamber of Commerce gave its backing to the Grade A Milk Ordinance recently enacted by the municipality. The ordinance provides for pasteurization, cooling and bottling in plants which conform to rigid standards of plant sanitation and bacteria count for their products. Here are some of the other provisions:

All farms or milk plants bringing into or selling milk within the city limits must be inspected not less than twice a year by the city milk inspector.

Standards for the grading, pasteurization, protection from contamination and handling of milk are included.

Specifications for maintenance of cleanliness in every milk production plant, dairy farm, or any place in which milk is handled prior to consumer distribution, are prescribed.

It is provided that the health officer or a designated physician shall examine and take careful morbidity history of every person connected with a pasteurization plant, whose work brings him into contact with the production, handling, storage or transportation of milk, milk products, containers or equipment.

Any person found unfit by the examiner is barred from employment.

The Board of Health is given the right to discontinue the license of any person or company violating the ordinance.

In calling attention to this ordinance the Health Advisory Council of the Chamber of Commerce of the United States comments that "Terre Haute babies are gurgling with glee."

The Council's April 1945 bulletin cites several other significant instances of "How Chambers of Commerce Are Attacking on the Health Front."

Maine Studies Property Taxation

THAT the burden of real estate taxation in the state of Maine does not appear to be disproportionate to income, with the one exception of forest land located in the municipalities, is an important conclusion of a report submitted on April 2, 1945, to the Legislature of that state, by the Property Division of the Bureau of Taxation.

In the administration of the general property tax, however, this Tax Study finds that there is much unfairness because of inequality of assessments, to remedy which "additional training, education, and funds for financing these activities must be forthcoming in order to organize a long-range program to make a start toward the elimination of inequalities."

The report also states that "there does not seem to be any necessity for eliminating the state property tax as was popularly supposed," and that, "it does not now appear practical for a state income tax or sales tax to be originated for the purpose of eliminating the state property tax."

(See "Tax Study Reports," page 145, this issue.)

Conventions—When and Where

***May 22—Rochester, N. Y.**
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Regional Meeting. (Hotel Powers.) Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York 20, N. Y.

***May 23—Syracuse, N. Y.**
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Regional Meeting. (Hotel Onondaga.) Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York 20, N. Y.

***May 24—Albany, N. Y.**
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Regional Meeting. (Hotel DeWitt Clinton.) Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York 20, N. Y.

***May 25—White Plains, N. Y.**
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Regional Meeting. (Westchester County Bldg.) Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York 20, N. Y.

June 4-7—Rock Island, Ill.
BUILDING OFFICIALS' CONFERENCE OF AMERICA. Annual Meeting. Sec.-Treas., Arthur N. Rutherford, Building Inspector, West Hartford, Conn.

June 18-21—Toronto, Ont., Canada
CANADIAN FEDERATION OF MAYORS AND MUNICIPALITIES. Annual Conference. (Hotel Royal York.) Sec., Jessica Allan, Mount Royal Hotel, Montreal, Quebec, Canada.

***June 27-29—Saskatchewan, Canada**
SASKATCHEWAN URBAN MUNICIPALITIES ASSOCIATION. Annual Meeting. (Council Chambers, City of Regina.) Sec.-Treas., S. N. MacEachern, Bessborough Hotel, Saskatoon, Sask.

City Manager Appointments

B. ARNOLD has succeeded D. O. McDougald as city manager of Fort Pierce, Fla.

JEAN BEIQUE, formerly with the Provincial Government as Engineer and for 10 years Engineer for the City of Grand'Mere, Quebec, has been appointed city manager of Grand'Mere to succeed J. Henri Valiquette who has been promoted to Trois Rivieres, effective May 1.

R. E. BORLAND, borough manager of Blairsville, Ore., since March 7, 1944, has been appointed city manager of Silverton, Ore., effective April 1.

W. B. BURNS, city manager of Fort Fairfield, Fla., from 1937 to 1941 and manager of Masardis since April 1941, has been appointed city manager of Caribou, Me., to replace Grover M. Hardison who resigned on March 28.

HARRY B. FLOOD, a local business man, has been appointed city manager of Stratford, Conn., to succeed William B. Shea who resigned effective March 16 because of ill health.

R. M. HOISINGTON, at present supervisor of Michigan FPHA and for 7 years an employee of TVA, has been appointed city manager for Ashtabula, Ohio, effective May 1.

DOW I. SEARS, Superintendent of the Water and Light Department of Fergus Falls, Minn., and manager of Ironwood, Mich., 1929-35, and Huron, S. D., 1935-40, has been appointed first borough manager of Pottstown, Pa.

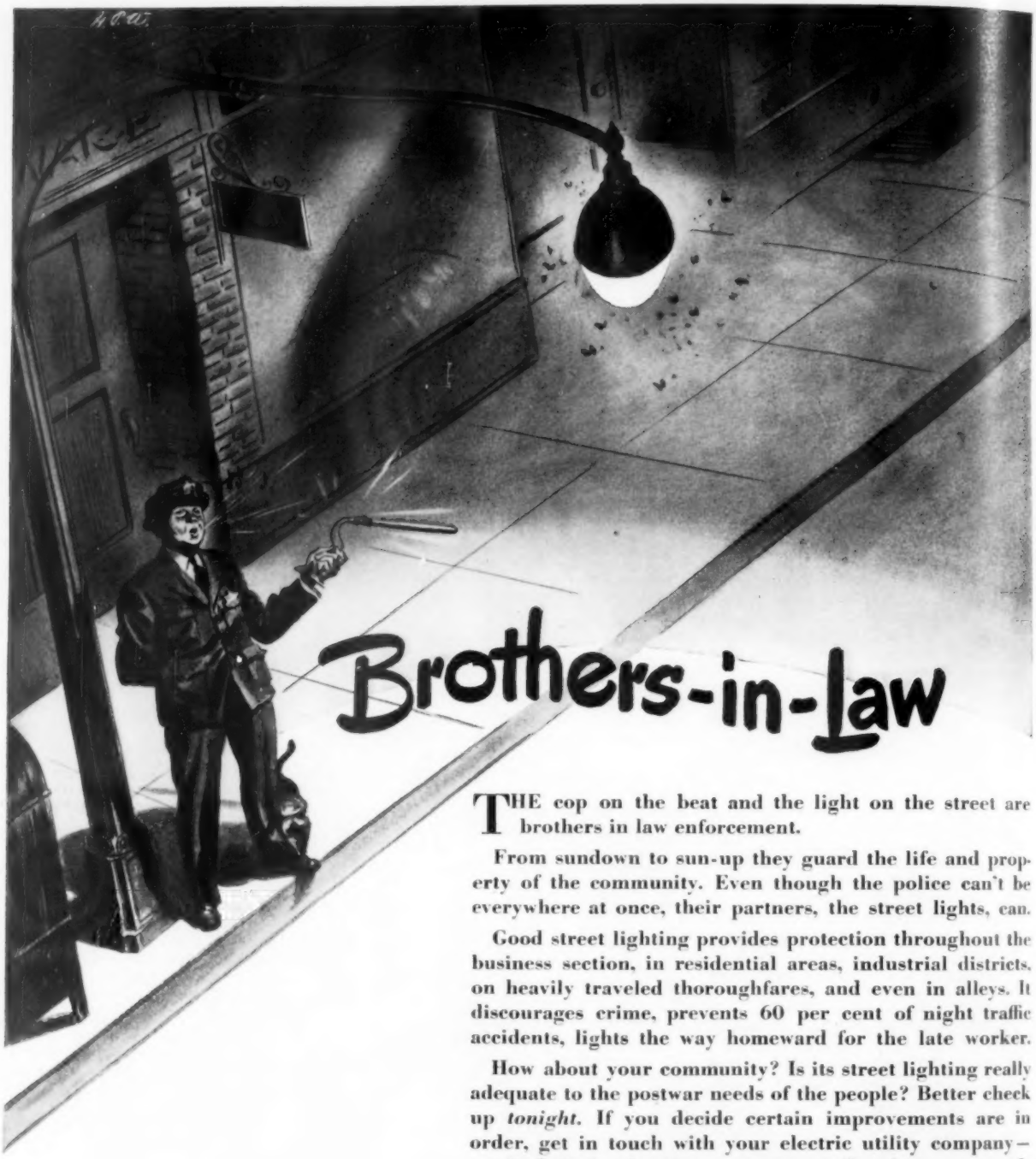
J. H. VALIQUETTE has been promoted to his fourth city, Trois Rivieres, Quebec, where he will take office on May 1. He served as manager of Shawinigan Falls, 1921-27; La Tuque, 1933-34; and has been at Grand'Mere since 1934.

CLARENCE E. RIDLEY
Executive Director
International City Managers' Association, Chicago, Ill.

The Municipal Bond Market

Some sales of new issues as reported in April issues of *The Bond Buyer:*

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$100,000	New Britain, Conn., Sewer Fund	.70	2-11 Ser.	.654
160,000	North Hempstead, N. Y., Manhasset-Lakeville Water Dist.	.90	10.0 Avg.	.892
2,435,000	Los Angeles, Cal., Water and Power Depts., Electric Plant Refunding	1.0	3.75/4.50 O.-A.	.9344
250,000	Pomona, Cal., Sewage Plant	1.0	8.50 Avg.	.97
140,000	Eagle Grove, Ia., Ind. Sch. Dist.	1.0	12.33	1.0
264,000	Eau Claire, Wis., Water Works Revenue	1.0	15.75 Avg.	1.0904
250,000	Sidney, Neb., Electric Revenue Refunding	2.0	11.33 Avg.	1.239
250,000	Freeport, Tex., Street Improvement	2.25	9.33/13.25 O.-A.	2.25
110,000	Barberton, O., Viaduct	2.50	6.0 Av.	2.50
365,000	McAllen, Tex., Water System Revenue	2.75	18.15 Avg.	2.81



Brothers-in-Law

THE cop on the beat and the light on the street are brothers in law enforcement.

From sundown to sun-up they guard the life and property of the community. Even though the police can't be everywhere at once, their partners, the street lights, can.

Good street lighting provides protection throughout the business section, in residential areas, industrial districts, on heavily traveled thoroughfares, and even in alleys. It discourages crime, prevents 60 per cent of night traffic accidents, lights the way homeward for the late worker.

How about your community? Is its street lighting really adequate to the postwar needs of the people? Better check up *tonight*. If you decide certain improvements are in order, get in touch with your electric utility company—get its help in planning a program tailored to your needs and your budget. Or write The Street and Traffic Safety Lighting Bureau, 155 E. 44th Street, New York 17, N. Y.

GOOD STREET LIGHTING—THE SIGN OF A GOOD PLACE TO LIVE

★

Municipal and Civic Publications

Municipal Training Manual Revised

THE TECHNIQUE OF MUNICIPAL ADMINISTRATION—*Second Edition. Published for the Institute for Training in Municipal Administration by The International City Managers' Association, 1313 E. 60th St., Chicago 37, Ill.* 1945. 556 *pp.* $7.50.

A revised edition of the first of eight training manuals in the International City Managers' Association's Municipal Management Series. Published in 1940, the first edition has been widley used in the training of municipal chief administrators and department heads. The purpose of this revision is to incorporate the lessons learned from its use in the past five years in the present training of municipal administrators. The chapters dealing with the job of the administrator, the organization problem, techniques of direction, and legal services and regulatory procedures have all been completely rewritten, and revisions have also been made in some of the other chapters.

Views of Landscape Architects on War Memorials

WORTHY MEMORIALS OF THE GREAT WAR.—*In the July* 1944 *issue of Landscape Architecture, 9 Park St., Boston 8, Mass.* 10 *pp.* 75 *cents a copy.*

With a growing interest in "living" memorials to perpetuate the memory of those who have given their lives in World War II, *Landscape Architecture* has reprinted an article by Fletcher Steel, "Among the More Potent Advocates of Peace Upon Earth," which appeared in its January 1920 issue, in the belief that because of its timeless quality, it is as appropriate today as when it was first written. Three standards for a good monument were set up by Mr. Steele: "A monument should be permanent; a monument should be fit for high memorial and devotional purposes; a monument should be beautiful."

In a comment following this article, Francis Cormier, of the New York Department of Parks, states the belief that Mr. Steele's article, with some modifications, might well be adopted by the American Society of Landscape Architects on its current Policy on War Memorials. If Mr. Steele were writing this article today, according to Mr. Cormier, he might put more stress on the desirability of pooling the funds of adjoining communities toward the erection of a substantial, well-designed monument, and spare the epidemic of hundreds of inadequate, poorly designed and improperly located tablets, boulders, tombstones, seats and other small monuments.

A bibliography on war memorials compiled by Katherine McNamara, Librarian at Harvard University, is included.

City Planning and Housing in Canada

HOUSING AND COMMUNITY PLANNING.—*A series of lectures delivered at McGill University in* 1943 *and* 1944. *Extension Department, McGill University, Montreal, Canada.* 1944. 210 *pp.* $1.

Publication of a lecture series on housing and community planning is an experiment on the part of McGill University. Written as separate papers and given as lectures in a series under the title "Housing and Community Planning, with Special Reference to Post-War Opportunities," this course was arranged by the School of Architecture. The lectures deal specifically with problems in Quebec and in Montreal, but they also cover the subjects in general. Contributors are both Canadians and Americans. Included in the discussion are the economic background of housing and community planning, land policy, regional planning, street systems, traffic and transportation, public housing, private and government planning, health and recreation, legal aspects of city planning, the national reconstruction program, and other topics.

The Future City

CITY DEVELOPMENT: STUDIES IN DISINTEGRATION AND RENEWAL.—*By Lewis Mumford. Harcourt, Brace and Co., New York.* 1945. 248 *pp.* $2.

Mr. Mumford's six most important essays on the subject of City Development, written between 1922 and 1945, make up this book. The last two, on The Social Foundations of Post-War Building and on the New Plan for London, are here published for the first time in the United States. The four earlier essays discuss The City, The Metropolitan Milieu, Mass Production and Housing, and Report on Honolulu.

Although many city planners would assign Lewis Mumford to membership in the ivory tower chapter of their fraternity, others believe that his philosophy of urbanism will help to banish the present patchwork era of city building and to guide more fundamental types of community redevelopment in years to come.

"The first step in adequate planning today," to quote from the essay on Post-War Building, "is to make a fresh canvass of human ideals and human purposes. All that was good in our past way of life will stand up under that scrutiny; all that was cheap, superficial, morbid or emptily materialistic will fall away." It is in presenting a persuasive case for that point of view, rather than in laying down any specific blue-prints for city development, that Mr. Mumford's six essays will have their most widespread and lasting influence.

The Boston Contest

THE BOSTON CONTEST OF 1944: PRIZE-WINNING PROGRAMS.—*Published by The Boston University Press, 685 Commonwealth Ave., Boston, Mass.* 148 *pp.*

A compilation of the 12 prize-winning programs in the recent successful Boston Contest, conceived by the Boston Society of Architects and administered by Boston University. In line with the purpose of the contest to develop citizen interest and participation in a master program for the sound growth and prosperity of the Boston metropolitan area, 90 entries were received when the contest closed on June 19, 1944. Topics treated by the contestants covered the fields of political organization, taxation and revenue systems, assessment and depreciation, industrial relationships and development, commercial relations and development, educational development, transportation, and citizen participation. First prize was awarded to a team from the Harvard University faculty headed by Carl J. Friedrich, professor of government; second prize by a team of Boston businessmen with Henry I. Harriman, former president of the Chamber of Commerce of the United States, as chairman.

CITY PLANNING AND THE PUBLIC MIND.—*Comment on the Boston Contest. By Joseph Hudnut. Reprinted from Architectural Record, January* 1945. 119 *W. 40th St., New York, N. Y.* 6 *pp.*

Professor Hudnut, Dean of the Graduate School of Design of Harvard University, who participated in the Boston Contest on its Executive Committee and as one of its judges, reviews the contest in this leaflet and relates its significance as a contribution to the progress of city planning.

Directory of Planning Organizations

PLANNING AND POST-WAR PLANNING—STATE ORGANIZATIONS.—*American Society of Planning Officials,* 1313 *E. 60th St., Chicago 37, Ill. January* 1945. 39 *pp.* $1.

Revised membership directory of the state planning agencies, including Puerto Rico and Ontario, as well as those specially created to undertake planning for the post-war period. A list of the current operation budget covering each organization is included.

A Complex of Housing Problems Discussed

A MILLION HOMES A YEAR.—*By Dorothy Rosenman. Harcourt, Brace and Co., New York.* 1945. 333 *pp.* 3.50.

A Million Homes a Year is a useful addition to the library of anyone interested in better homes in the United States. The author, Dorothy Rosenman, brings to the discussion long study and varied experiences and a tolerant readiness to sift impartially all ideas—even the most extreme or biased—in order to arrive at a sound conclusion.

The book covers the planning and construction of urban and suburban communities and rural homes; the needs of those in the higher, as well as lower income brackets; the areas served by private initiative, those requiring government subsidy, and the no-man's land in between.

It raises most of the perplexing problems that have puzzled the experts and discusses various solutions. There is an excellent chapter on community planning and an interesting study of the problem of urban taxation. The pros and cons of home ownership or rental are analyzed, including the pitfalls that surround the home owner and safeguards that might protect him.

Mrs. Rosenman outlines the role that government subsidy must play if our slums are to be eradicated and champions the work of the federal housing agencies. She shows clearly that their progressive program does not substantially interfere with the private contractor and investor. On the contrary, she points out many functions that government can and does perform which stimulate and aid private construction of homes.

Naturally, the book cannot dispose of the many special problems it treats with completeness and finality—if it did it would have to be encyclopedic in size, instead of a handy and readable volume. It does open the reader's eyes to new aspects and new ideas; and the bibliography indicates how those interested in any special phase can pursue it.

The final chapter concisely summarizes the author's conclusions. Mrs. Rosenman shows a clear understanding of the difficulties of the problem and nevertheless is optimistic enough to believe that we are on the threshold of an intelligent solution. I hope and believe that she is right.

STANLEY M. ISAACS.

Analyses of Real Estate Taxation

TAX STUDY REPORTS.—*David H. Stevens, State Tax Assessor, Property Division of the Bureau of Taxation, Augusta, Maine.* 1944 *and* 1945. *Graphs.* 5 *reports totaling* 175 *pp.*

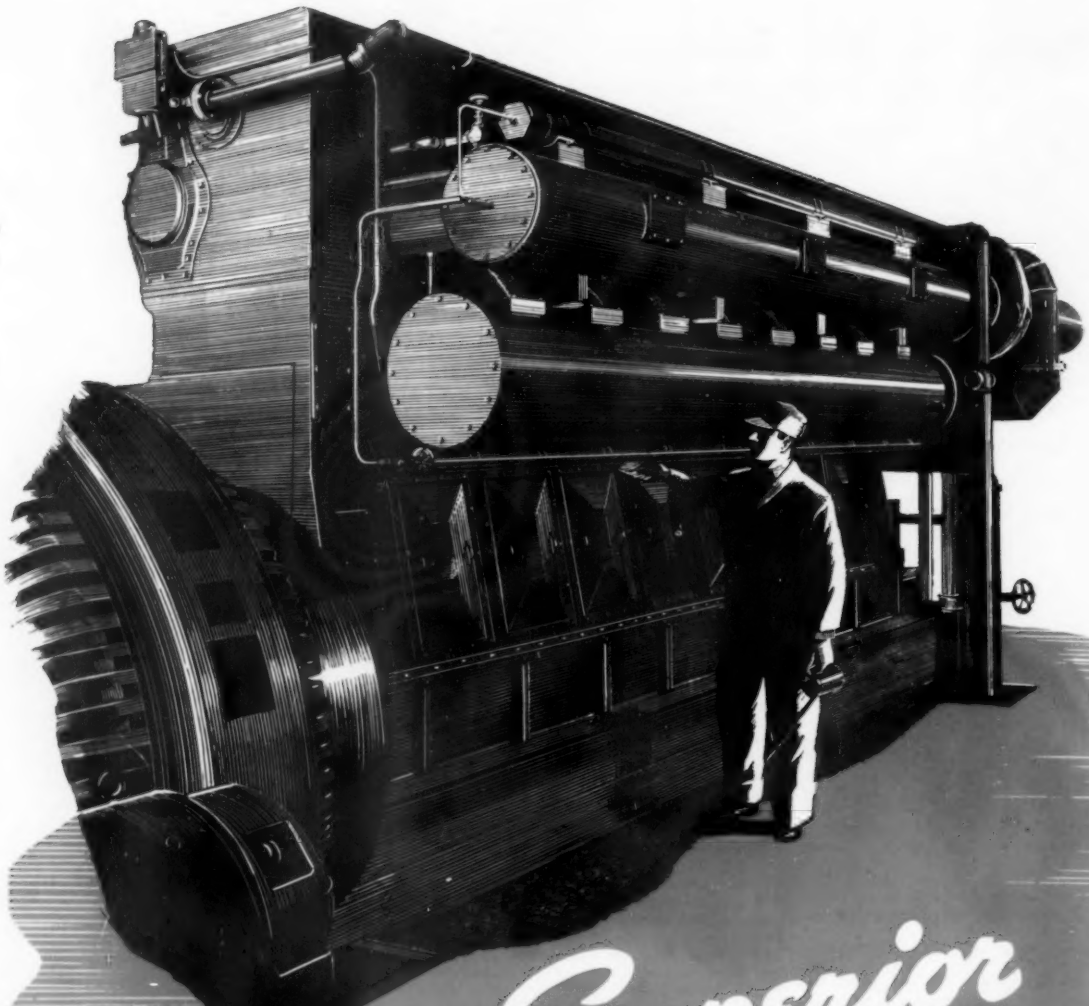
Made possible by an appropriation of the Maine State Legislature, under the title "Special Study for the Relief of Real Estate Tax," for the use of the Legislature in considering future tax legislation. Each of the reports in this series has been published successively within a year's time, the first preliminary report on May 18, 1944. They cover (1) farm property taxation, (2) taxation of residential property, (3) occupational income and taxes, (4) property and inequality of assessments—residential and industrial properties, and (5) a final report.

(See page 141 of this issue)

Post-War Public Works

TAX POLICY: *Issues of February, March and April,* 1945.—*Tax Institute,* 150 *Nassau St., New York 7, N. Y.* 25 *cents per copy.*

Because of the importance of problems relating to the place of public works in the post-war world, the Tax Institute has devoted three successive issues of *Tax Policy* to a scholarly and practical discussion of various aspects of this subject. The title of the three issues are Fiscal Significance of Public Works, Public Works and the Construction Industry, and Planning and Financing of Public Works.



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Municipal Law Annual

MUNICIPALITIES AND THE LAW IN ACTION: 1945 EDITION.—*Edited by Charles S. Rhyne, National Institute of Municipal Law Officers, 730 Jackson Pl., N. W., Washington 6, D. C. 500 pp.* $10.

Again the National Institute of Municipal Law Officers has reviewed the legal problems which confronted American cities during the past year, in this, the eighth edition of the National Institute's compendium of current municipal law. Of special value to busy attorneys in their task of giving legal advice to city officials by combining the legal experience of cities, this compilation covers the unusual problems of cities during the third year of war as well as the ordinary problems with which cities are constantly concerned.

This volume contains the Proceedings of the 1944 Conference of the National Institute held in Cleveland in December, including the reports of 20 committees covering the field of municipal government, together with the discussions which took place. Most of the material compiled in this book is available in no other place, as, for example, the compilation of opinions on labor union contracts in the report by the Committee on City Officer and Employee Problems.

Elementary Surveying Textbook Revised

ELEMENTARY SURVEYING.—*By Charles B. Breed and George L. Hosmer. John Wiley & Sons, Inc., 440 4th Ave., New York 16, N. Y. 1945. 717 pp. Illus.* $4.

Eighth edition of Vol. I of a series, "The Principles and Practice of Surveying," in which the authors have produced a textbook to include the essentials of a comprehensive knowledge of practical surveying and at the same time adapted to the use of teachers and students in technical schools. In this book, which is essentially an elementary treatise, such subjects as stadia, plane table, hydrographic and geodetic surveying are entirely omitted, these subjects being left for a later volume.

The subject matter of this book is arranged in four parts: the use, adjustment, and care of instruments are first taken up; then surveying methods, computations, and plotting, are presented in the order met by the surveyor in the daily practice. To conform to present practice, the text on Public Lands Surveys has been completely rewritten in this eighth edition, and the text, tables and charts in some of the other chapters have been brought up to date.

Athletic Fields and Stadiums: Bibliography

A SELECTED LIST OF REFERENCES ON ATHLETIC FIELDS AND STADIUMS.—*Compiled in the Library of the Departments of Landscape Architecture and Regional Planning, Harvard University. Katherine McNamara, Librarian. March 1945. Mimeo. 3 pp.*

Bibliography giving foreign and domestic sources for material on athletic fields and stadiums. References include 43 books, magazines, papers and photographs published from 1923 to date.

Better Government

HANDBOOK OF LOCAL GOVERNMENT.—*Dayton Chamber of Commerce, Biltmore Hotel, Dayton, Ohio. 1945. 25 pp.*

To stimulate interest in local government, the Dayton Chamber of Commerce has undertaken an educational program and will present to the citizens of Dayton a number of studies of which this handbook is one. It answers such questions as What Is Government? What Are Taxes? What Is Tax Limitation? It points out the functions and activities of local government units and outlines Dayton's tax incomes and expenditures, as well as Montgomery County's, and the state sales tax. It stresses the importance of planning for the future and of proper voting. In conclusion, it lists the ways the citizen can help to insure better government—"an informed citizen is a good citizen."

Parking Problems

PARKING SYMPOSIUM ISSUE. *February 1945 issue of* Traffic Engineering. *Institute of Traffic Engineers, 60 John St., New York 7, N. Y. 48 pp. Single copy 20 cents.*

Parking is the number one item of interest of *Traffic Engineering* readers, a survey conducted last year disclosed. This issue deals primarily with parking and takes in terminal problems, parking meters, curb and off-street parking.

Improving Parking Facilities

SOLUTIONS TO LOCAL PARKING PROBLEMS.—*By D. Grant Mickle. From the Proceedings of the 30th Annual Michigan Highway Conference, Feb. 29, 1944. Reprinted by Automotive Safety Foundation, Tower Bldg., Washington 5, D. C. 24 pp.*

Upon popular demand, indicating a widespread interest in the parking problem, this pamphlet has been reprinted for the second time from the proceedings of the annual Michigan Highway Conference held more than a year ago.

In places where volunteer action cannot solve the parking problem, according to Mr. Mickle, Traffic Engineer of the Automotive Safety Foundation, more and more cities are coming to the conclusion that parking must be solved by making adequate parking provisions a public responsibility, as in the case of streets and highways. As there is no one solution for the parking problems which exist in almost every city, Mr. Mickle offers solutions for conditions which prevail in small towns, in medium-sized cities, and in large cities.

Improving Great Bay Region

THE GREAT BAY PLAN—*A Report to the 1945 Legislature. By the New Hampshire State Planning and Development Commission. Concord, N. H., March 1945. 22 appendices. Illus. 59 pp.*

A plan for the development of the Great Bay Region of New Hampshire, prepared by the New Hampshire State Planning and Development Commission at the direction of the New Hampshire State Legislature. The Commission recommends that the 1945 Legislature establish an authority consisting of 11 members to develop the resources of the Great Bay Region, and that a sum of $9,500 be allocated each year, for two years, to be used in making surveys, for rehabilitation work, and to cover miscellaneous expenditures, these funds to be placed in the custody of the Commission.

To open up the Great Bay Region for more extensive development, the Commission deems it necessary to (1) make it accessible, (2) correct its pollution, (3) improve its fisheries, (4) check the erosion of its lands, (5) determine the need for dams, (6) improve its land use, (7) provide an estimate of costs and stages of development, (8) establish an Authority charged with its effective development according to an agreed upon plan.

Grade Crossing Elimination and Terminal Improvements

REPORT ON PROPOSED RAILROAD GRADE CROSSING ELIMINATION AND TERMINAL IMPROVEMENT FOR NEW ORLEANS, LA.—*Prepared under the direction of Fred A. Earhart, Commissioner, Department of Public Utilities. Godat and Heft, Consulting Engineers, New Orleans. September 1944. Vol. I, 102 pp. and 40 plates; Vol. II, Appendices, 135 pp. and 99 plates.*

Four alternative programs proposed for New Orleans, including construction of new freight yard facilities, abandonment of existing yards and lines, construction of new passenger terminal facilities or modernization of existing facilities, and changes in operating arrangements, as well as grade separation. This report is divided into two volumes—Volume I contains a brief summary and the entire report, including general plans and summaries of all cost estimates; Volume II contains all detailed cost estimates and preliminary plans, profiles and details of each grade separation proposed. A complete study of all railroad facilities and operations in New Orleans has been made, with particular reference to the interference occurring between rail and vehicular traffic.

Community Development

MISTAKES WE HAVE MADE IN COMMUNITY DEVELOPMENT.—*By J. C. Nichols. Technical Bulletin No. 1. Urban Land Institute, 1737 K St., N. W., Washington 6, D. C. 8 pp.*

The first of a series of Technical Bulletins to be published as a supplement to *Urban Land*, J. C. Nichols, chairman of the Community Builders' Council of the Urban Land Institute, in the light of his wide experience as land developer and builder of the Country Club District in Kansas City, Mo., and consultant and advisor to several federal housing agencies, enumerates 69 "mistakes" and the lessons learned over 40 years in developments of detached single-family homes. Another article by Mr. Nichols, "Mistakes We Have Made in Developing Shopping Centers," is now being prepared for publication. A charge of $1 to non-members or for extra copies includes both Mr. Nichols' articles.

Pension Policy in Illinois

PENSIONS FOR POLICEMEN AND FIREMEN.—*Publication No. 67. Research Department, Illinois Legislative Council, Springfield, Ill. March 1945. Mimeo. 32 pp.*

An investigation of the need for improving the laws in Illinois relating to pensions for policemen and firemen. This report presents factual information bearing upon the laws now in force and the pension funds operating thereunder, and makes alternative suggestions as a means of correcting the existing conditions and bringing about a solution of the problem.

Other Reports Received

BOSTON, MASS.—*Comparative Status of 85 Cities and Towns in the Boston Metropolitan Census District.* Bureau for Research in Municipal Government, Harvard Graduate School of Public Administration. December 1944. 35 pp. 75 cents.

CHICAGO, ILL.—*Instructions on Election Laws and Election Procedure.* Board of Election Commissioners of Chicago. 1944. Can be obtained from the Municipal Reference Library, 1005 City Hall, Chicago, Ill. 267 pp.

CINCINNATI, OHIO.—Annual Report of the Department of Purchasing. 1944. 11 pp.

ERIE, PA.—Annual Report of the Department of Accounts and Finance. Joseph C. Martin, Director. January 1, 1945. 75 pp.
Budget for 1945: Where the Tax Dollar Goes. 55 pp.

MICHIGAN.—Twenty-Third Report of the Michigan State Tax Commission and the State Board of Assessors, 1943-1944. Lansing, Michigan. 92 pp.

NEW JERSEY.—Report of the Commission on Taxation of Intangible Personal Property. Submitted to the Governor and to the Legislature March 26, 1945. Trenton, N. J. 102 pp.
Hearings before the New Jersey Commission on Taxation of Intangible Personal Property. Assembly Chamber, State House, Trenton, N. J. November 29-30, 1944.

NEW KENSINGTON, PA.—Eleventh Annual Report of the Controller for Year Ending December 31, 1944. Smith McKee, Jr., Controller. Mimeo. 29 pp.

OHIO.—Proceedings of the First Ohio Traffic Engineering Conference. October 25-26, 1944. Co-sponsored by Ohio Traffic Safety Council, Ohio Department of Highways, Ohio State Automobile Association. 89 pp.

PORTLAND, MAINE—Annual Report of the City Planning Board. 1944. Mimeo. 16 pp.

SCHNECTADY, N. Y.—Annual Report of the Director of Finance for the Fiscal Year Ending December 31, 1944. H. A. Root, Director. 55 pp.

SPOKANE, WASH.—Annual Report of the City Auditor for the Year Ending December 31, 1944. 104 pp.

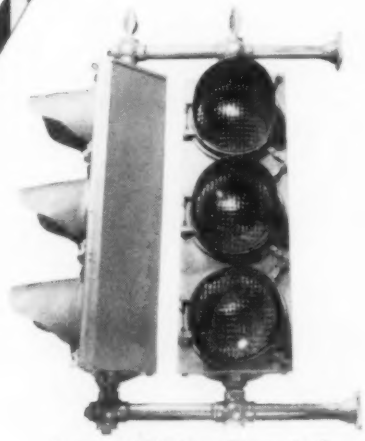
CONTROL OF TUBERCULOSIS BY THE STATE.—Publication No. 65. Research Department, Illinois Legislative Council, Springfield, Ill. December 1944. 41 pp.

SOUTHERN SWITCH & SIGNAL COMPANY

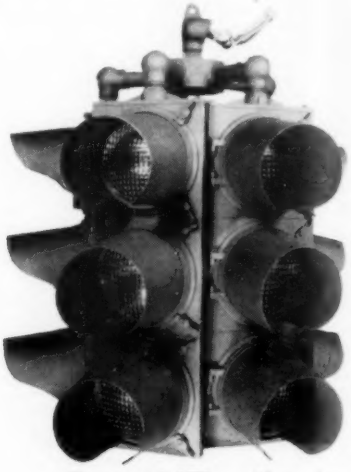
Shreveport, Louisiana

The Automatic **PROTECT-O-ARM**

The Automatic Protect-O-Arm consists of an improved safety gate, combined and controlled from standard traffic signal circuits. Its effectiveness and popularity have demonstrated its place in the safety field.

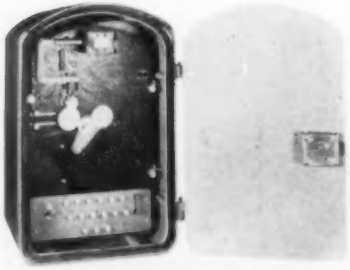


Type 32-BMA—Three-light two-way bracket mounted adjustable traffic signals.

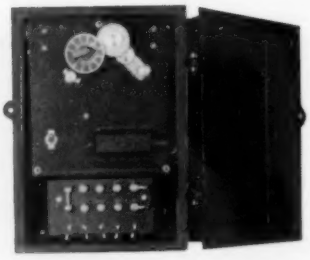


Type 35-SW — Also furnished in post or bracket mounting.

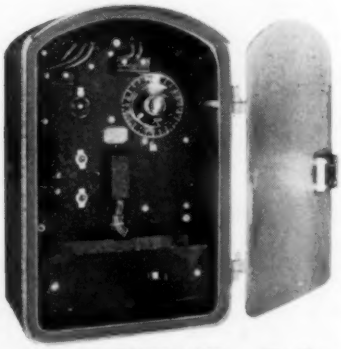
TRAFFIC SIGNALS and CONTROLS DESIGNED and MANUFACTURED ACCORDING TO STANDARD OR INDIVIDUAL SPECIFICATIONS



Type 99-RM5—Traffic signal controller, equipped for remote operation.



Type 99-A—Standard 6-circuit synchronous, heavy-duty traffic signal control.



Type 99FR-RR — Traffic signal controller for controlling signals at railway crossings.

"THERE IS NO SUBSTITUTE FOR EXPERIENCE"

News and Illustrations

Items of Interest to City, Town and County Officials and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

Lt. Col. H. N. Hill of the Birmingham Ordnance District of ASF presents the Army-Navy "E" flag to Edward E. Brass.

Shreveport Concern Wins Army-Navy "E"

The men and women employees of the Shops of Edward A. Brass, Shreveport, La., have received the Army-Navy "E" award for excellence in war production. Presentation ceremonies took place on March 30 at 213 Airport Drive.

The municipal division of the shops, known as Southern Switch and Signal Co., have designed for post-war production many new products in their line of safety equipment. Major activities planned include sub-station decentralized fire alarm systems with electronic repeaters, new type multiple circuit puncturing registers, and many other controls that have been developed in the electrical-mechanical experimental department.

Littleford Appoints New Distributors

Littleford Bros., Inc., 500 E. Pearl St., Cincinnati 2, Ohio, has added to its list of distributors the following companies:

EDWARD R. BACON CO.
2101 Folsom St.
San Francisco 10, Calif.

CARROLL-EDWARDS & CO.
Richmond & McLean Sts.
Cincinnati, Ohio

HARDIN AND COGGINS
1717 N. Second St.
Albuquerque, N. M.

STATE EQUIPMENT CO.
P. O. Box 668
Harrisburg, Pa.

MILLER G. WILLIAMS MACHINERY CO.
Foot of Coosa St.
Montgomery, Ala.

GIBBS-COOK TRACTOR & EQUIPMENT CO.
1314 Walnut St.
Des Moines 9, Iowa

INDIANA EQUIPMENT CO., INC.
327 W. Market St.
Indianapolis 4, Ind.

MILTON-HALE MACHINERY CO.
1024 North Broadway
Albany, N. Y.

NOBLE-BELISLE MACHINERY, INC.
P. O. Box 391
White River Junction, Vt.

WOLVERINE TRACTOR & EQUIPMENT CO.
35 E. 7 Mile Rd.
Detroit 3, Mich.

TRACTOR & EQUIPMENT CO.
Sidney, Mont.

These distributors will handle the complete line of Littleford Black Top road maintenance and construction equipment.

Chicago Bridge & Iron President Dies

George T. Horton, President of Chicago Bridge & Iron Co., died suddenly on March 19. Mr. Horton had been associated with the company from 1893. His father, founder of the company, died in 1912 and at that time he took over the presidency.

Mr. Horton was noted as an engineer and was responsible for many of the developments in the company's design. He was an honorary member of the Western Society of Engineers and the Chicago Engineers Club. Other engineering affiliations included: American Society of Civil Engineers, American Society of Testing Materials, Society of Naval Architects and Marine Engineers, American Petroleum Institute, and Engineers Club of New York.

Sealing Compound for Waterproofing and Sealing Joints

Municipalities contemplating post-war paving projects in airport, street, and highway work will be interested in details on Para-Plastic. This modern sealing compound for waterproofing and sealing joints of all types is manufactured by Servicised Products Corp., 6051 W. 65th St., Chicago 38, Ill.

This plastic has the ability to remain flexible, pliant, and retain indefinitely its tenacious power to grip and permanently hold to the surface or edges of whatever type material it is applied, whether wood, steel, glass, stone or concrete. It is also capable of holding its bond indefinitely in all types of weather conditions.

Para-Plastic is also recognized as a seal against infiltration because of its properties of adhesion and cohesion, bonding, self-healing and resiliency. It is able to perform an almost endless variety of important functions in the construction, maintenance, and manufacturing problems of waterproofing.

Poly Phosphate Comparator

Low concentrations of the poly (glassy) phosphates, such as hexameta, pyro, septa (threshold treatment) are coming into more and more general use. They are employed in power plants and hot water systems to prevent feed-line deposition; in air conditioning and refrigeration units, laundries, dish washers, milk handling equipment to prevent deposition and corrosion, in municipal water and process waters to stabilize the water and prevent corrosion; in photograph to prevent deposition on film and paper.

The Taylor Poly Phosphate Comparator, a simple, rapid and accurate method of analysis, has been developed by W. A. Taylor & Co., 7300 York Rd., Baltimore 4, Md. Previous methods required several hours boiling to convert the glassy phosphates to the ortho form. By the Taylor method a complete determination requires only 20 minutes. After conversion, two reagents are added separately and the blue color formed is compared with standards giving the total phosphate content. A determination on the cold sample (no boiling) gives the ortho present in the original sample. The difference between the two determinations give the polyphosphate content.

The Taylor poly phosphate comparator consists of 8 standards, 2 comparison tubes, funnel, filter paper, graduate flask, and reagents in a wooden carrying case.

VITAL VEINS torn out too soon?

the prevention:

Adequate Wiring

Only adequate wiring written into the plans can protect new buildings against far-too-early electrical obsolescence . . . can provide plenty of power for plenty of years.

Big as today's loads are, tomorrow's will dwarf them. Lighting intensities are still going up. Further increases in demand will be made by air conditioning, fluorescent lighting, electrical office and production machines and electronic equipment — to mention a few of many current-consuming future necessities.

HOW TO BE PREPARED ELECTRICALLY

When planning electrical systems for industrial buildings, commercial buildings and institutions, you can act on this principle: "More Power Sources and More Power at Each Source." For example, you can take one or more of these steps: You can make sure of ample copper in the wires and cables; you can provide more electrical outlets; for industrial buildings you can provide operating economies through high voltage cables and unit sub-stations at load centers. You can provide savings through power factor correction with such equipment as synchronous motors and capacitors. For the right wiring for each particular job, you can go over your plans with a consulting electrical engineer or an experienced electrical contractor or an engineer of The Okonite Company, Passaic, N. J. or The Hazard Insulated Wire Works Division, Wilkes-Barre, Pa.

HAZARD insulated wires and cables

3918

PHOTO BY NAVY SEABEES

Asphalt paving mix is being fed by a B-G asphalt finisher for the paving of landing strips on Guam.

Barber-Greene Equipment Resurfaces Airfields

On the island of Guam in the Marianas Navy Seabees wasted no time rebuilding airfields since it is one of the hopping off places for Tokyo and the Volcanic Islands.

In this work the Seabees have been using an asphalt plant as well as asphalt finishers supplied by the Barber-Greene Co., Aurora, Ill. for the production of asphalt paving mix for the landing strips. The Seabees report an hourly mix of 160 tons from the central plant set-up. A novel feature of the set-up was the use of two B-G dual drum dryers in tandem with a Barber-Greene bucket loader between elevating the partially dried aggregate.

The final mix was transported to the Barber-Greene asphalt finishers by truck.

Graver Tank & Mfg. Co. Appoints Florida Salesman

N. B. Graham has become associated with Graver Tank & Mfg. Co., Inc., 4809-35 Tod Ave., East Chicago, Ind., in charge of water treating and process equipment sales in the Tampa, Fla., area. He will make his headquarters in Tampa, contacting western Florida and portions of the gulf coast area.

N. B. Graham

Mr. Graham, formerly Vice-President in charge of industrial sales for Elgin Water Softener Co., has a 20-year record in the water treating field, and is considered an authority on the subject.

Officers Elected by Asphalt Institute

The Board of Directors of The Asphalt Institute, 801 Second Ave., New York 17, N. Y., representing the major part of the petroleum asphalt production industry of the United States and Canada, recently elected the following officers at its annual meeting.

H. B. Pullar of Berry Asphalt Co. was elected Chairman of the Executive Committee. Other members of the Committee chosen are Ole Berg, Jr., Union Oil Company of Calif.; C. E. Cox, Carter Oil Company; F. R. Field, Standard Oil Company of New Jersey; A. M. Maxwell, Standard Oil Company of Ohio; F. V. Widger, Witco Chemical Company; and J. S. Williams, Rock Island Refining Company.

The five vice-presidents elected with their respective divisional jurisdiction include:

Division 1—Atlantic Gulf, F. R. Field

Division 2—Ohio-Great Lakes, A. M. Maxwell

Division 3—Midwest, C. E. Cox

Division 4—Southwest, J. S. Williams

Division 5—Pacific Coast, Ole Berg, Jr.

Bernard E. Gray was re-elected General Manager-Chief Engineer, and Herbert Spencer, President of the Institute. George R. Christie, Socony-Vacuum Oil Company, Inc., was re-elected Secretary and Treasurer with John N. Smith of the same company, Assistant Treasurer.

During the year new Institute offices were opened in Division 3 at Billings, Mont., with John R. Banning in charge; in Division 4 at Oklahoma City, Okla., with A. J. Kavanaugh in charge; and in Division 5 at Portland, Ore., with W. A. Bugge in charge. Present plans include the opening of additional offices by Division 3 at Chicago and by Division 1 at Boston.

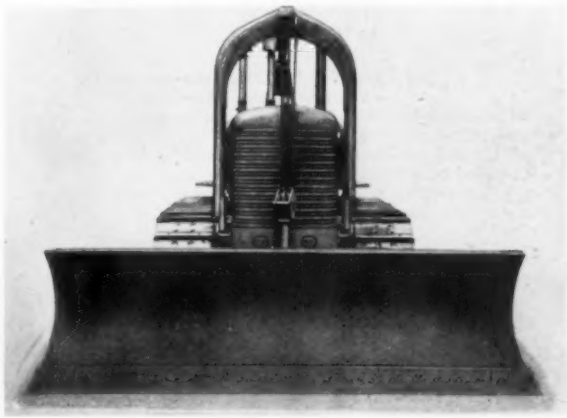
Baker Announces Cable Controlled Bulldozers

Baker Mfg. Co., Springfield, Ill., after a quarter-century of building earth-moving equipment, and after experimentation and study of various designs, is introducing a line of cable controlled bulldozers, gradebuilders, and power-control units made exclusively for A-C HD-14, HD-10, and HD-10W Tractors. The present and well-known Baker hydraulic bulldozer and gradebuilder is readily recognized by its overhead tie bar and its direct lift and full down pressure on the blade.

Features of the cable controlled line include: sturdy, reinforced tubular, arch, rugged constructed box-welded moldboard; five-position side arms which permit tilting of blade up to 10 inches on the bulldozer and 12 inches on the grade builder for a perpendicular position; 12-inch blade lift above the ground on the bulldozer, and 50 inches on the gradebuilder; a blade drop below ground level limited only by the length of the cable.

The power control units feature differential or self-energizing brakes whereby the dead end load assists the spring in setting the brake, and arranged so that the differential factor increases as the band lining wears.

These units are made in heavy-duty double drum and single drum types for rear mounting on Allis-Chalmers HD-14 and HD-10 tractors, double and single drum medium duty units for HD-7 tractors and a single drum front mounting type for HD-14 and HD-10 tractors.



Model 514 Baker Gradebuilder on Allis-Chalmers HD-14 tractor.

KARPARK'S EXTRA 1/2 INCH DOUBLES ITS STRENGTH

• Ordinary accidents, even severe collisions and bumps, do not bother the Karpark meter. The answer lies in its rugged mechanism and sturdy steel housing mounted on a heavy steel standard, having a 3/16" wall and a 2½" inside diameter—compared to the usual 2". This extra ½" practically doubles its strength. Such strength means longer service—less maintenance—another reason why *Karpark is the wise choice.* Write for the whole story.

KARPARK *Automatics*

KARPARKS ARE MANUFACTURED BY THE HERSCHEDE HALL CLOCK CO.

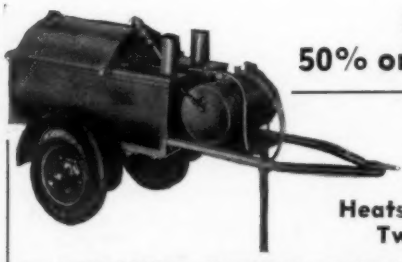
KARPARK CORPORATION CINCINNATI 6, OHIO

STEWART FENCES
ADD DIGNITY TO PUBLIC PROPERTY

Stewart Plain and Ornamental Iron Fence, Chain Link Wire Fence, and other iron, wire and bronze products will soon be available for the protection and beautification of all types of public property. Send for literature which contains complete information. When writing please indicate the products in which you are especially interested. **The Stewart Iron Works Co., Inc., 1221 Stewart Block, Cincinnati 1, Ohio.**

Experts in Metal Fabrications Since 1886

Stewart IRON and WIRE FENCES



Saves 50% on Time & Fue

The Aeroil HEET-MASTER

Heats Tar & Asphalt Twice As Fast

The "HEET-MASTER" will produce as much "hot stuff" as two ordinary tra oil-burning kettles of the same capacity. Now obtainable on pneumatics. (Ai mud guards at slight extra cost.) Send for FREE Bulletin No. 250AC. Fo Cut-Back and Emulsion Sprayers, Bulletin No. 190A. Oil-burning Lead and Pla Compound Melting Furnaces, Bulletin No. 232AC. Portable Oil Burner & Tar Outfits. Bulletin 174A. Asphalt Paving Tools & Accessories, Bulletin 512A Asphalt Paving Tool Heaters and Asphalt Pavement Heaters, Leaflet 171A.

Aeroil Burner Co., Inc., West New York, N. J.

CHICAGO 16 SAN FRANCISCO 7 DALLAS

The "Quinn Standard"
FOR CONCRETE PIPE

The Quinn Standard is known as the best the wo over, wherever concrete pipe is produced and us Backed by over 30 years' service in the hands of hu dreds of Quinn-educated contractors, municipal depa ments and pipe manufacturers who know from exper ence that **Quinn pipe forms** and **Quinn mixing furnac** combine to produce the finest concrete pipe at lowest cos

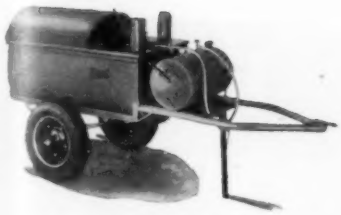
Quinn Heavy Duty Pipe Forms

For making pipe by hand methods by either the w or semi-dry processes. Built to give more years of se vice—sizes for any diameter pipe from 12 to 84 inch —tongue and groove or bell and pipe—any length.

WRITE TODAY

Complete information, prices and estimates sent request. Also manufacturers of Quinn Concrete Pip Machines.

QUINN WIRE & IRON WORKS 12TH ST. BOONE, IA.



Model 3TSP equipped with pneumatic tires—one of Aeroil's HEET-MASTER kettles.

Aeroil 55-Gallon Kettles Again Available

Aeroil Burner Co., Inc., West New York, N. J., announces that for the first time since 1942 the 55-gallon Aeroil HEET-MASTER kettles are back in production. These are available in three different types of mountings—3TSP on pneumatic tires, 3TS on steel wheels, and 3T on skids.

Any one of the three models are said by the company to heat and melt as much bituminous material in a day as a 110-gallon unit of the conventional type.

The Aeroil HEET-MASTER is thoroughly insulated and heated from the inside. Other features include the removable heating unit and the specially designed draw-off cock.

The company will send Leaflet No. 260F giving an X-ray view and full details on the 55-gallon HEET-MASTER kettles to municipal officials.

Southeastern Sales Manager for National Cast Iron Pipe

John T. Woodson, formerly Southeastern Sales Manager for National Cast Iron Pipe Division of James B. Clow & Sons, Birmingham, Ala., has been appointed Southern Sales Manager, and will serve both southeastern and southern territories.

John T. Woodson

Mr. Woodson, for many years connected with the Lynchburg Foundry Co., Lynchburg, Va., has been associated with National Cast Iron Pipe since 1940.

Chief Sales Engineer for Mack-International

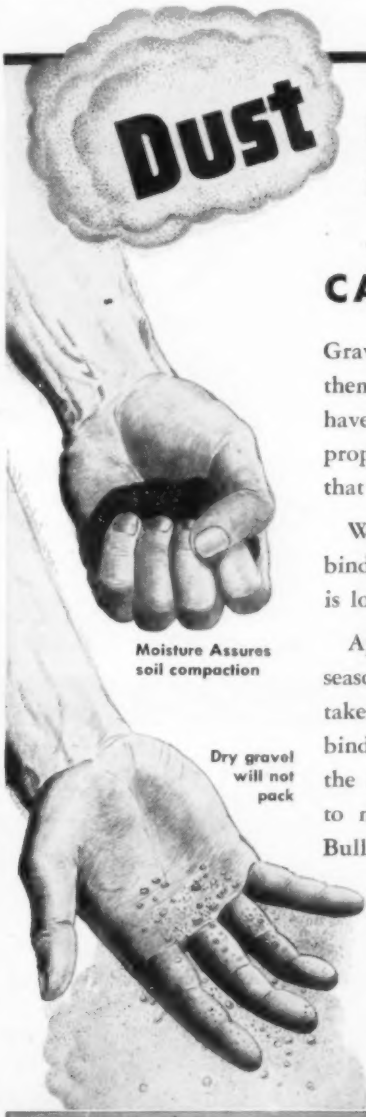
John Walker has been appointed Manager of the Sales Engineering Department of Mack-International Motor Truck Corp., according to a recent announcement by C. T. Ruhf, President of Mack Trucks, Inc., Empire State Bldg., New York 1, N. Y. Mr. Walker has had wide experience in applying special engineering principles to unusual transportation problems, and will make his headquarters in the executive offices in the Empire State Bldg.

Mr. Walker joined the organization in 1918 as a member of the Engineering Department and two years later transferred to the Special Equipment Department. In 1922 he was placed in charge of the department, and in 1942 was named assistant to the chief engineer, which position he held until his present appointment.

Another appointment has been announced by Mr. Ruhf. Harry Bernard was named Director of Service and Service Engineering and will make his headquarters in the Long Island City plant. He will be responsible for over-all policy and management control of both organizations. Mr. Bernard has been associated with Mack since 1924 and prior to his present appointment had been General Service Manager.

Frank Widger with Witco Chemical

After approximately thirty-two years with the Texas Company, Frank V. Widger has accepted the position of Manager of the Asphalt Department of the Witco Chemical Co., 295 Madison Ave., New York 17, N. Y., processors of asphalt and asphalt specialties with plants at Chicago and Lawrenceville, Ill.



Dust is the CEMENT in your gravel roads . . . save it with CALCIUM CHLORIDE

Gravel roads need binder soil to hold them together—and binder soil must have moisture to give it cementing properties. Calcium chloride provides that long-lasting moisture bond.

When roads become dusty, the fine binder soil blows away. As binder soil is lost, road serviceability goes with it.

Apply calcium chloride early in the season so that moisture compaction takes place before dust carries the binder soil away. It is easier to save the road than resurface it . . . cheaper to maintain than rebuild it. Get our Bulletin 29 on Low Cost Roads.

CALCIUM CHLORIDE ASSOCIATION
4145 Penobscot Bldg., Detroit 26, Mich.

Dust is the cement in your gravel road
Save it with
CALCIUM CHLORIDE

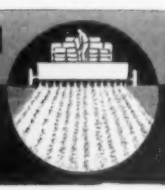


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PHOTO-RECORDING ECONOMY

DATA FOR RECORDERS

HENRICO COUNTY VIRGINIA

BOOK OF 600 PAGES	
TYPING . . . labor and supplies	$160.50
DEXIGRAPH . . . labor, supplies, depreciation	122.06
Savings 24% or	$38.44

Deliveries in half the time — cost reduced 24% . . . that is the way *Dexigraph* "went to work" making recordings, and transcriptions in Henrico County Courthouse, Richmond, Virginia. The details are interesting . . .

"In 1941 the demand for recorded documents and certified copies of various papers was placing too great a burden on our small staff to continue manual copying," states Helen Clevenger, County Clerk.

"Our problem was to obtain equipment in which the investment was sufficiently small for our moderate-sized county. Further, we wanted to accelerate our services—and with the strictest economy possible.

"We installed a *Dexigraph Recording Camera* and it has done all we wanted, to our complete satisfaction."

In this County, delivery time of recorded deeds of bargain and sale, mortgages, trusts, indentures and other documents has been cut in half. Expenses were lowered substantially. Hazards of error in typing and the need for proof-reading were entirely eliminated.

Possibly *your* County is finding difficulty meeting increased demands for recorded documents and certifications. Ask our nearest Branch Office for full details of *Dexigraph.*

SPEED - VERSATILITY - SIMPLICITY - ECONOMY

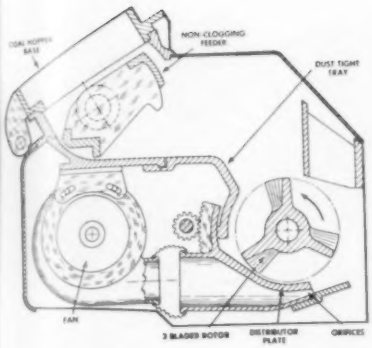
REMINGTON RAND

DEXIGRAPH

The Dexigraph Recorder is a compact machine that can be plugged into any electric socket and located adjacent to the records. It will reproduce original instruments in full size and prepare transcripts in standard legal size. It can be purchased outright or leased on a monthly basis.

YOU CAN COPY BETTER WITH PHOTOGRAPHY

PHOTOGRAPHIC RECORDS DIVISION, REMINGTON RAND, BUFFALO 5, N. Y.



Sectional diagram of the "J & J" Spreader Type Stoker.

New Spreader Type Stoker

The new "J & J" Spreader Type Stoker introduced by The Johnston & Jennings Co., 861 Addison Rd., Cleveland 14, Ohio, offers many features which are said to increase the efficiency of combustion.

One of these features is the non-clogging and dust-tight coal feeder which is adjustable for various operating conditions.

The efficient 3-bladed rotor receives the coal from the feeder tray and discharges it into the furnace off the end of the distributor plate. A small high velocity fan mounted in back of the rotor, and discharging through orifices under the distributor plate, catches the fines and distributes them to all parts of the furnace.

The stoker unit mounted on the cast iron front with four hinge pins makes it an easy matter to remove the 2 pins on one side, disconnect the drive belt, and swing the entire stoker to an angle of 90 degrees, permitting easy and quick inspection or repair.

The stokers are furnished in four standard sizes, with 16-, 20-, 24- and 32-inch long rotors.

Airports a Community Responsibility

At a luncheon clinic in New York on February 16, staged by *Airports* magazine, it was stated that development of our airports and airparks is to a large extent a community responsibility, comparable to the building of roads, parks, waterways and similar civic enterprises.

It was also pointed out that the so-called fixed base operator is one of the keystones of the entire civil aviation structure, because his work covers such important airport activities as charter flying, student instruction, airport management, aircraft sales and services, airport construction and maintenance, purchase of products, and the leasing of space and privileges to concessions.

South Bend GUTTER-SNIPE
Pick-up Street Sweeper

MUNICIPAL SUPPLY COMPANY
Manufacturers
Street Sweepers
Street Flushers
Bituminous Distributors
SOUTH BEND 23, INDIANA

★ ★

Fresh, high quality broom fibres last longer

AFRICAN BASS FIBRES
INDIA PALMYRAH STALKS

The longer mileage you obtain from fresh broom fibres means less time-taking refilling of the broom core and valuable man-hours put to an extra use. The use of fresh, high-quality fibres in your mechanical sweeper is sound economy these days.

We are able to service every need in all types and sizes. We would be happy to receive your request for samples and quotations.

MOUNTAIN HICKORY SPLINTS
STEEL WIRE SWEEPER STALKS

The OTTO GERDAU CO.
Established 1872
82 Wall Street, New York 5, N. Y.

NO Skilled LABOR

That's all you see on this job . . . a man with a calking tool and a hammer to socket the spigot in

McWANE 2" CAST IRON PIPE

and calk. The joint materials are already placed in the pipe bells at the foundry. No lead to melt and pour. McWane PRECALKED pipe *halves* installation time . . . and costs.

McWANE CAST IRON PIPE CO.
Birmingham 2, Ala.

BRONZE MEMORIALS
AND
HONOR ROLL TABLETS
OF EVERLASTING
BEAUTY AND DIGNITY

Consider carefully the manner in which you perpetuate the memories of those who served and sacrificed. Truly fitting memorials and honor roll tablets cannot be produced at this time while bronze must be devoted entirely to war uses. When the Government releases this enduring metal, we shall be ready with a complete new series of designs that will be worthy of association with such General Bronze achievements in casting as the famous statues at Rockefeller Center and the beautiful bronze Baldachino in St. Patrick's Cathedral. These new memorials and honor rolls will reflect our thirty-five years' experience in fine bronze work. Send for our interesting and helpful brochure.

GENERAL BRONZE CORPORATION
34-44 TENTH STREET LONG ISLAND CITY 1, N.Y.

CUT MAINTENANCE COSTS 75%

Concrete slab maintenance costs can be reduced as much as 75% by the Koehring Mud-Jack Method. The Mud-Jack raises sunken concrete walks, curbs and gutters, driveways, streets, and airport runways eliminating reconstruction costs. Write for the new Mud-Jack Bulletin which is both illustrative and descriptive.

KOEHRING COMPANY (10)
Milwaukee, Wisconsin

MUD-JACK METHOD

THE SHOPS OF EDWARD A. BRASS
of Shreveport, Louisiana
is honored to announce that
THE ARMY - NAVY
PRODUCTION AWARD
was presented
to the Men and Women
of this company
on
MARCH 30, 1945

Army-Navy "E" Award to Economy Pumps

For outstanding accomplishment in the production of war equipment, employees and management of Economy Pumps, Inc., Hamilton, Ohio, were recently awarded the Army-Navy "E" by the War Department.

R. H. Thomas

At the formal presentation which took place at the factory, acceptance of the award was made by R. H. Thomas, President of the company, and the "E" pins, presented by Lt. Com. H. E. Padley, were accepted by Benjamin T. Jacobs, Jr., representing the workers.

Economy Pumps, Inc., manufacturers of centrifugal pumps since 1915, has been engaged almost entirely since the outbreak of the war in the production of pumping machinery for Army and Navy use in all parts of the world.

New York District Manager for American Well Works

W. H. Moeller has been appointed Manager of the New York District for the American Well Works, Aurora, Ill. This New York District includes Albany and Schenectady to the north, Trenton, N. J., to the south, and all of Long Island.

Mr. Moeller is well known in this district as he has long been identified with sales and the engineering of hydraulic and electrical machinery.

The W. K. Snowdon Co. will continue as special representative of the organization in the water and sewage treatment lines, and will operate under Mr. Moeller's direction.

"A Boy Died Last Night" Wins Advertising Award

The advertisement "A Boy Died Last Night," which appeared in the September, 1944, issue of THE AMERICAN CITY, has been selected among the One Hundred Outstanding Wartime Advertisements of 1944 by the Wartime Advertising Awards Committee. In recognition of this advertisement Allis-Chalmers Mfg. Co., Tractor Division, Milwaukee, Wis., and its agency, Bert S. Gittins Advertising, also of Milwaukee, were awarded Certificates of Merit "for a campaign contributing to the welfare, security and activity of the nation at war." The Jury of Awards Committee was made up of prominent advertising men. Advertisements were nominated for consideration by a selected group of advertising leaders, members of OWI, and the War Advertising Council.

In a recent statement to stockholders, Walter Geist, Allis-Chalmers President said, "In the year just past, production records of your company reached another new peak—with over three times as much equipment manufactured and delivered as in the year Pearl Harbor was attacked. This tripling of our production, we are proud to say, has made itself felt all through American industry."

Neptune Meter Appoints Sales Member in South

Harry J. Siebert of Richmond, Va., has joined the sales staff of The Neptune Meter Co., 50 W. 50th St., New York 20, N. Y., and will represent the company in North and South Carolina.

Harry J. Siebert

Mr. Siebert is a civil engineering graduate of V.M.I. He is an honorably discharged veteran of World War II, having served in the Army for four years, and in the campaigns of Normandy and Northern France as a first lieutenant in the Mechanized Cavalry.

A timely message to City Managers

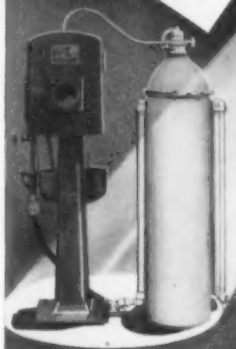
HAND heavy-duty storage batteries, when installed in the following Departmental vehicles, show long life characteristics:

POLICE RADIO CARS	3-6 yrs.
SANITATION TRUCKS	3-6 yrs.
ROAD SCRAPERS & SNOW PLOWS	3-6 yrs.
EMERGENCY TRUCKS & AMBULANCES	4-6 yrs.
FIRE ENGINES	4-9 yrs.

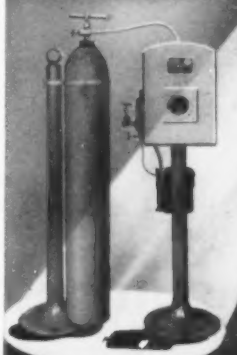
HAND storage batteries are unconditionally guaranteed for two years. Departmental test runs are invited.

The HAND LABORATORY
for
Electro-Chemical Research and Development
Nyack, N. Y.

CHEMCO CHLORINATORS HAVE NO MOVING PARTS, SPRINGS OR DIAPHRAMS TO WEAR OUT OR REPLACE -INVESTIGATE-
Send FOR THE FOLLOWING FREE BULLETINS
BULLETIN 300-1-TYPE-M-1
BULLETIN 300-3-TYPE-M-3
BULLETIN 300-5-TYPE-M-5
R.S.T.



CHEMCO TYPE M-1



CHEMCO TYPE M-3

OTHER "CHEMCO" PRODUCTS
FILTERS
WATER SOFTENERS
HYDROGEN ION PLANTS
COMPLETE PURIFICATION SYSTEMS
FOR SWIMMING POOLS
ETC.

CHEMCO TYPE M-5

CHEMICAL EQUIPMENT CO.
MAIN OFFICE - LABORATORY - FACTORY
323 CENTER ST. - LOS ANGELES 54 - CALIF.
MID-WEST FACTORY BRANCH
205 W. WACKER DR. - CHICAGO, ILL.
REPRESENTATIVES IN PRINCIPAL CITIES

I mean our town's new kind of water!"

Sure he loves it! So will everybody in *your* city. Because *this* kind of water—conditioned by Permutit*—makes any city a better place to live, work and play!

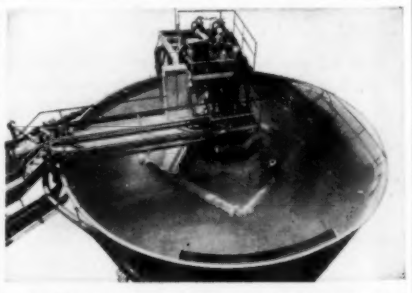
Permutit removes hardness and other impurities from municipal water supplies, makes the water soft, clear, free of iron.

Plan *now* for this Number One Improvement in your city. Write to The Permutit Co., Dept. **G-3,** 330 West 42nd Street, New York 18, N. Y. or Permutit Co. of Canada, Ltd., Montreal.

*Trademark Reg. U. S. Pat. Off.

PERMUTIT

WATER CONDITIONING HEADQUARTERS



PERMUTIT SPAULDING PRECIPITATOR removes hardness, dirt and color by the sludge blanket process. Cuts detention time, saves chemicals and space. Present installations handle capacities up to 120,000,000 gallons daily. One of many Permutit methods of treating water.

William J. Orchard surrounded by some of the flowers presented to him on the occasion of his thirtieth anniversary with Wallace & Tiernan.

W. J. Orchard 30 Years With Wallace & Tiernan

William J. Orchard, General Manager of Wallace & Tiernan Co., Inc., Newark 1, N. J., was honored on April 16 by his fellow workers on the occasion of his thirtieth anniversary with the company.

Mr. Orchard is the fifth member of the organization's W&T Diamond Club to attain 30 years of service. M. F. Tiernan, President of the company, presented his 30-year service pin to Mr. Orchard, before the assembled employees. The Diamond Club, composed of members who have 10 years or more service with the company, presented to Mr. Orchard a gold cigarette lighter to commemorate the occasion.

Mark B. Owen Joins Consulting Engineering Firm

Mark B. Owen, Director, Committee on Post-War Construction of the American Society of Civil Engineers, has resigned to become a partner in the Russell B. Moore Co., consulting engineers, Indianapolis, Ind., specialists in water works, sewerage, sewage treatment, refuse disposal, airports and airport facilities, street improvements and highway bridges, and grade separations. During his activities for the post-war committee, Mr. Owen has fostered the development of programs throughout the United States, cooperating with local groups, the Committee for Economic Development, the Chamber of Commerce of the United States, and other national organizations.

Mark B. Owen

Prior to this, Mr. Owen had for seven years been in charge of engineering design and sales of all municipal equipment in North and South America for a New York corporation producing municipal and industrial furnaces and incinerators.

Previously he had served for seven years as Commissioner of Public Works and Engineering for the city of Dearborn, Mich., where he directed the construction of numerous public works improvements, such as storm and sanitary sewers, water mains, pavements, grade separations and two sewage treatment plants to provide facilities for a population that grew from 5,000 to 55,000.

Fire Extinguisher Assn. Elects Officers

The Chemical Fire Extinguisher Association at its recent annual meeting in Chicago re-elected the following officers:

President: Arthur G. Sullivan, Vice-President
Buffalo Fire Appliance Corp.
Buffalo, N. Y.

Vice-President: J. O. Binford, General Sales Manager
American-La France-Foamite Corp.
Elmira, N. Y.

Treasurer: Herman W. Diener, Sec.
George W. Diener Mfg. Co.
Chicago, Ill.

Commissioner: W. J. Parker
W. J. Parker, Inc.
New York, N. Y.

Directors re-elected: George H. Boucher, General Sales Manager, Pyrene Mfg. Co., Newark, N. J.; E. A. Warren, Vice-President, General Detroit Corp., Detroit.

FREEDOM—*from water shortage*
Establish a dependable water source—a deep drilled well that taps the underground water strata, free from surface contamination. Install a Peerless Pump.

FREEDOM—*from excessive power bills*
Highest pumping efficiencies are maintained by Peerless Pumps by reason of their fine engineering. Double bearings in the bowl and double impeller seals insure retention of original efficiencies and double the life of the pump.

FREEDOM—*from pump breakdowns*
Rugged construction of Peerless Pumps, combined with precision of finish, insure dependability of operation throughout the year.

FREEDOM—*from costly repairs*
Peerless Pumps are simplest in design. Perfect balance, exact fit, absence of destructive vibration, and foolproof construction, insure long life and minimum upkeep cost.

Peerless Distributors and Direct Factory Representatives are located in every State.

PEERLESS PUMPS

PEERLESS PUMP DIVISION
Food Machinery Corporation

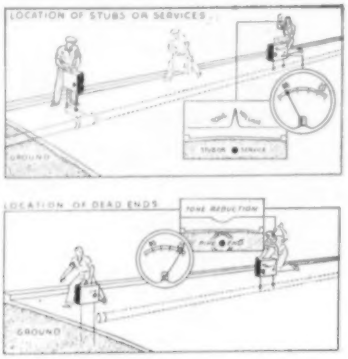
TURBINE
HI-LIFT
HYDRO-FOIL

301 W. Ave. 26, Los Angeles 31, Calif. • 1250 Camden Ave. S.W., Canton 6, Ohio • Other Factories: San Jose 5, Fresno 16, Calif.

Buried Pipe and Cable Finder

M-SCOPE

Water Leak Detector



FREE 16-PAGE BOOKLET UPON REQUEST

The M-SCOPE consists of a specially designed radio Transmitter and Receiver, with conductive wire. In operation, the Transmitter sends out a continuous signal, and when there is no metal between Transmitter and Receiver, a definite volume of sound is heard in the Receiver earphones and the meter (mounted on Receiver) gives a definite reading. If a metal object lies between the two units, sound in earphones is louder and meter reading higher—and the pipe or other metal object is located.

An M-SCOPE Water Leak Detector is so "sensitive" that it can spot the exact trouble point even through concrete; so "speedy" that it can test from 275 to 300 hydrants in a single day; so "accurate" that it usually hits the trouble spot "right on the nose" and "always" within a circle two to three feet in diameter.

City Water Superintendents and Army Engineers alike, these days realize the importance of conserving "water, pipe, fuel." The M-SCOPE Water Leak Detector helps you conserve all three.

The M-SCOPE is solving—successfully—the varied problems involved in the development, operation and maintenance of buried pipe and cable systems and is in daily use by representative organizations in such important groups as:

- Government Projects
- Municipalities
- Sewerage and Water Plants
- Consulting Engineers
- Airports
- Public Utilities
- Industrial Plants
- Oil and Pipeline Companies

FISHER RESEARCH LABORATORY PALO ALTO, CALIFORNIA

Eastern Distributors of
FISHER M-SCOPE and LEAK DETECTORS

Joseph G. Pollard Co., Inc.

PIPE LINE EQUIPMENT

141 ASHLAND PLACE, BROOKLYN 1, NEW YORK

MORE FORD TRUCKS ON THE ROAD . . . on more jobs . . . for more good reasons!

Ford

FORD MOTOR COMPANY

APHALT and TAR KETTLES

Fire Proof—Oil Burning

Hand and Motor driven spray.
Many sizes. Write for catalog.

Elkhart White Mfg. Co. Indiana

CENTRIFUGAL PUMPS FIRE HYDRANTS A.W.W.A. GATE VALVES

Manistee single-stage, double-suction pumps, 75-20,000 g.p.m. capacity
Manistee multi-stage pumps, 50-3500 g.p.m. capacity with heads up to 1600 feet

WRITE FOR BULLETINS

MANISTEE IRON WORKS COMPANY MANISTEE, MICHIGAN

General Sales Manager for LaPlant-Choate

S. L. (Sid) Myers has been appointed Vice President and General Sales Manager of LaPlant-Choate Manufacturing Co., Inc., Cedar Rapids, Iowa, succeeding H. H. Buchanan who resigned. Mr. Myers was formerly Vice President in charge of Export Sales.

S. L. Myers

He has been associated with the company in various capacities for over 22 years including work in the Machine Shop and service as Traffic Manager, Purchasing Agent and Export Sales Manager, in addition to being responsible for Government Sales. In 1943 he was advanced to the position of Vice President, and in that capacity he has continued to serve until his recent appointment.

Koehring Receives Third Army-Navy Award

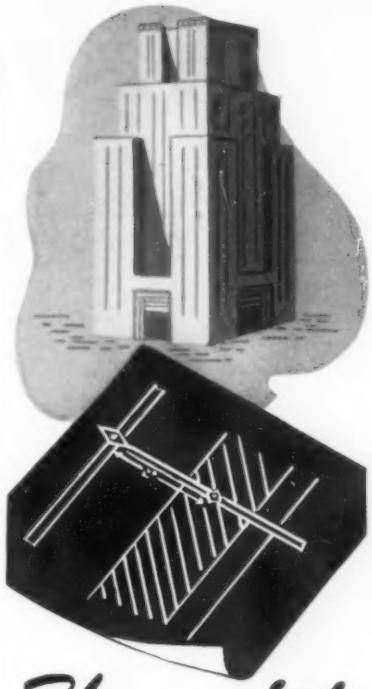
The men and women employees of the Koehring Co., Milwaukee, Wis., have received for the third time the Army-Navy Production Award. This third citation adds a second white star to the company's "E" flag as a symbol of continued achievement in producing materials essential to the war effort.

Koehring Co. is supplying to the armed forces large quantities of ½-yard, ¾-yard and 1½-yard excavators. The company's peacetime products include a wide range of sizes of excavators, hauling equipment and concrete handling equipment.

Experts in Development of Recreation Areas

F. Ellwood Allen Associates, 101 Park Ave., New York 17, N. Y., have recently been organized to make available to communities a complete recreation service composed of technicians familiar with the many specialized branches involved in recreation planning. These include primarily functional planning, engineering, architecture, landscape architecture, furnishings, equipment, and operation and management programming for many types of physical and cultural recreation areas.

For those interested, the organization can provide preliminary planning and consulting services. Should complete planning service be required and the necessary supervision to carry a project to completion in communities where such services are not available, the Associates are prepared to assume responsibility for all phases of work.



Blueprint
BY McDONALD

More and more, comprehensive blue prints for post-war municipal building are taking form, and more and more engineers are specifying McDonald Corporation Stops, Curb Stops, Goosenecks, and the complete Diamond Line of water works goods. The reason—McDonald is their first choice for quality and dependable service—backed by eighty-nine years of experienced manufacture. Write for availabilities and details.

Plate E-4713 McDonald Patent Cap Inverted Key Curb Stop for copper service pipe (round way) Galvanized Malleable Tee Handles. Both ends have copper pipe couplings.

EST. 1899
McDonald

A. Y. McDONALD MFG. CO.
DUBUQUE, IOWA
BRASS GOODS PUMPS OIL EQUIPMENT

TANK RUSTING PREVENTED Electrically

Modern, service-proved Rusta Restor method . . . using safe, low voltages . . . gives lasting protection . . . for the cost of just one good paint job.

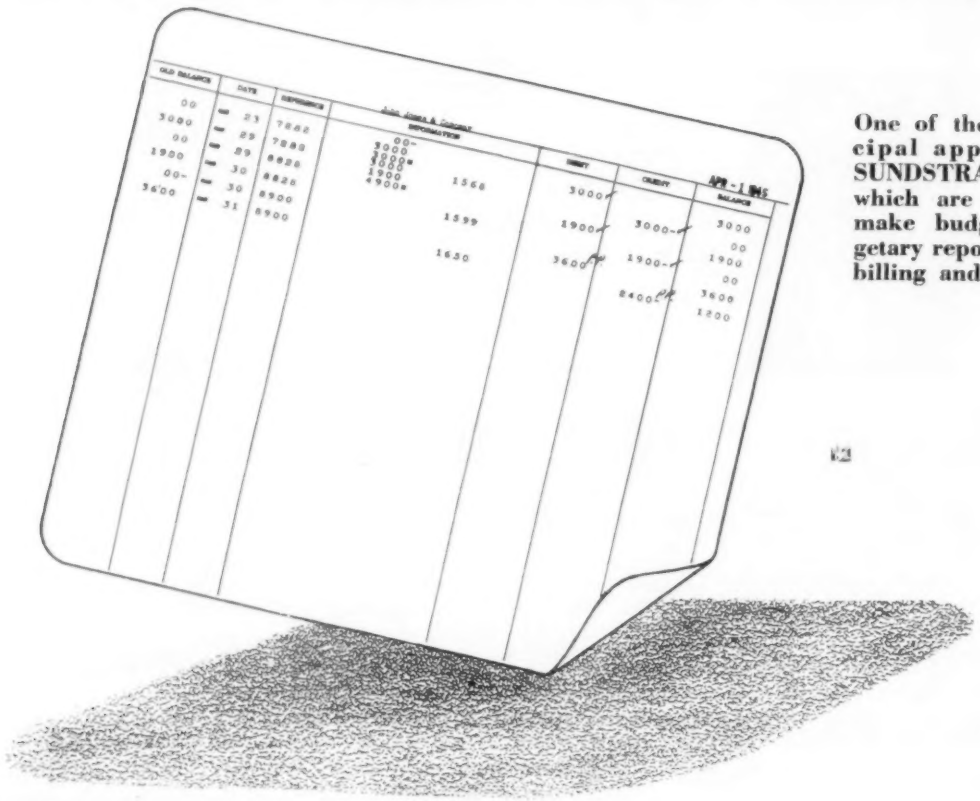
• Engineered to the individual tank and water conditions, Rusta Restor the modern, cathodic (i.e. electrical) equipment maintains the tank in a "electro-negative" or "neutral" state that gives positive and lasting protection against rusting. Rusta Restor is modest in first cost and cheap to operate. Hundreds of installations from coast to coast are your assurance of efficient, reliable performance. Send for full details today.

Send for Catalog

RUSTA RESTOR
THE PROVEN CATHODIC (i. e. ELECTRICAL) RUST PREVENTIVE
A DIVISION OF
THE JOHNSTON AND JENNINGS COMPANY
861 ADDISON ROAD CLEVELAND 14, OHIO

OCEGO VAPOR CONSERVATION AND FIRE PREVENTION EQUIPMENT FOR VOLATILE LIQUID STORAGE TANKS . . . STOWE STOKERS . . . HAMMERED FORGINGS

VENDOR'S LEDGER



One of the many Muni cipal applications o SUNDSTRAND machine which are used also t make budget and bud getary reports and do ta billing and posting.

SAYS PERRY W. RODMAN

City Comptroller of Bridgeport, Conn.

"The SUNDSTRAND accounting machine is used for ledger posting on vendor's account by vendor, showing the commitment, date entered into, and the amount, the liquid tion of commitment and the date of liquidation. This provides a separate control an checkout for the commitment controls carried on the appropriation ledger card

"ADVANTAGES are: a detail of accounts payable at all times that are not actually evidenced by a vendor's invoice; from whom you buy, when and in what amounts. These necessary sources of information are given as a by-product of a primary function, namely the controlling of commitments which are carried by account numbers only, on the appropriation ledgers with the detailed information as to the actual vendor."

Let us send you particulars on the Sundstrand Municipal Accounting Machine which simultaneously prepares the tax bill, tax roll and enters the tax charge on the Unit Tax Ledger card. . . . When the payments are received, Sundstrand posts them on the Unit Tax Ledger card against the years to which they apply. Whenever desired, Sundstrand produces a trial balance of delinquent taxes, giving balances by years and the total tax due on each parcel. Let us give you free particulars.

Sundstrand Accounting Machines are available subject to War Production Board authorizatio

UNDERWOOD CORPORATION

Manufacturer of the Famous Sundstrand Municipal Accounting Machine

One Park Avenue New York 16, N.

Ransome Machinery Appoints Vice-President

Carl F. Oechsle has been appointed Vice-President in Charge of Sales of Ransome Machinery Co., Dunellen, N. J., a subsidiary of Worthington Pump and Machinery Corp., Harrison, N. J. Worthington's Construction Equipment Department, of which Mr. Oechsle is Manager, will now handle Ransome's line of contractors' mixers and pavers. Headquarters of this sales department still remain in Holyoke, Mass., with regional offices in New York, Washington, Cleveland, Chicago, and San Francisco.

Carl F. Oechsle

Maxim Silencer Receives Third "E" Award

The Maxim Silencer Co., Hartford 5, Conn., was recently awarded a third star for its Army-Navy "E" production award burgee.

The original award was received in 1943, the first star added six months later, and the second star in June 1944. Maxim silencers are in wide use on Diesel powered craft in the Navy, Coast Guard, and Merchant Marine, as well as in Diesel equipped industrial plants throughout the country.

Commenting on the award, H. H. Maxim, President of the company, said, "I am proud to see the third star on our pennant. It is an indication of the singleness of purpose with which the people in our plant have stuck to their jobs. . . ."

The Future for Aluminum is Bright

The aluminum industry in 1944 went far enough "over the top" in supplying war needs of the United States and its Allies to permit WPB to close down entirely a number of government-owned aluminum plants, releasing thousands of workers to shell-producing plants and other crtical industries. Even with substantial reduction in production, growing amounts of aluminum are going into semi-military and civilian uses.

Some semi-military uses are airplane land mats and aluminum gasoline drums weighing 21 pounds each as compared with 52 pounds for those of other materials. These light drums enable our Air Transport Command to deliver each month hundreds of thousands of extra gallons of fuel "over the hump" to China. Typical of civilian uses are aluminum hopper cars in use on the Burlington Railroad, and a most interesting aluminum boxcar just completed for service on the Great Northern Railroad. Wherever possible, surplus aluminum stock left in military stores has been utilized.

Aluminum manufacturers during 1944 developed a number of new alloys of military importance and of far-reaching peacetime significance. A new Alcoa alloy, 75S, has a yield strength about twice that of the strong aluminum alloys used only a few years ago, and an ultimate strength exceeding 80,000 pounds per square inch.

The research laboratories of the Aluminum Company of America have completed and put into commercial operation a process which successfully uses a much lower grade of ore. The use of this Alcoa combination process, which should have great future significance, makes possible the use of low-grade ores which were considered of little commercial value before the war. A new alumina development laboratory to work out further improvements of this new process has just been completed at the East St. Louis Works of the Aluminum Company of America.

The lowered price of aluminum ingot, now 25 percent below pre-war levels, and the fact that many thousands of additional workers are familiar with the characteristics and advantages of aluminum through its widespread use in the manufacture of war materials, give indication of a greatly enlarged civilian market after the war.

I. W. Wilson
Vice-President in Charge of Operations
Aluminum Company of America

COMPLETE MACHINE SHOP SERVICE

BORING
MILLING
HONING
GRINDING
DRILLING
REAMING
WELDING

YOUR Automotive Jobber!

Plus a complete stock of over 100,000 service parts, tools, equipment, supplies and accessories to service or recondition gasoline and Diesel motors, pumps, compressors and other mechanical units. A completely equipped machine shop with precision-trained personnel assures prompt intelligent service on many maintenance problems!

You can depend upon your Automotive JOBBER!

NSPA

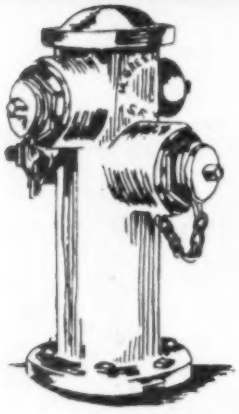
PARTS • TOOLS • EQUIPMENT
ACCESSORIES • SUPPLIES

THE COMPLETE ASSOCIATION

Devoted to maintaining and improving the Quality Standards of Service Parts, Equipment and Accessories manufacture, distribution and installation in America's thirty million automotive vehicles, and millions of internal combustion engines, and mechanical equipment.

NATIONAL STANDARD PARTS ASSOCIATION
35th Floor, 8 South Michigan Avenue, Chicago 3, Illinois

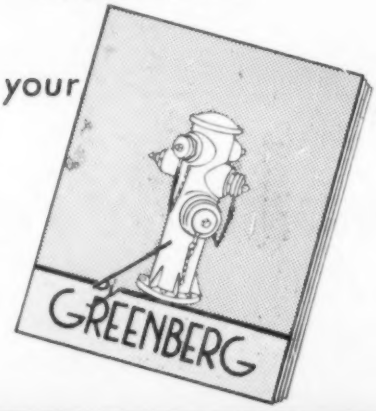
A COMPLETE HYDRANT SERVICE



Originators of the CALIFORNIA type of Hydrant, with INDIVIDUAL, integrally constructed globe type valves on all outlets. We have manufactured and sold this type of Fire Hydrant with its various improvements continuously for over seventy-five years. This is the Fire Fighter's Ideal Hydrant for use in non-freezing climates. Sold through your jobber.

FOR THE COMPLETE
Story of Hydrants for all Climates . . .

Send for your
FREE
COPY OF "HYDRANTS BY GREENBERG"



STABILITY
Since 1854

M. GREENBERG'S SONS
765 FOLSOM STREET ★ SAN FRANCISCO, 7

LEADITE

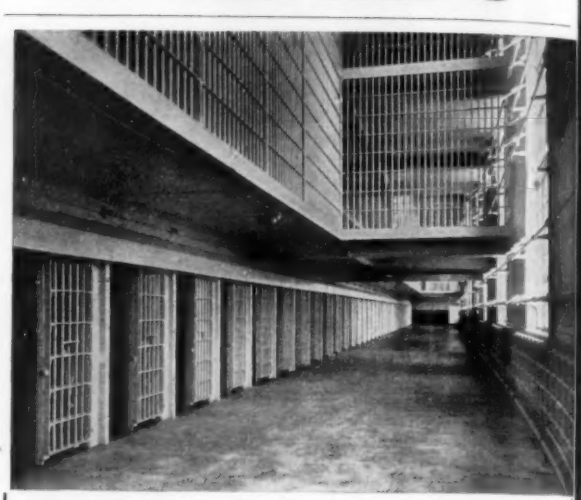
FOR JOINTING CAST-IRON WATER MAINS
Melted and Poured *No Large Bell-holes to Dig*
Saves at Least 75%

Leadite is shipped in powder form, packed in sacks of 100 lbs. net each. Leadite tested and used for over 40 years • Leadite joints improve with age.

Be sure it is Leadite and accept no imitations

THE LEADITE COMPANY
Girard Trust Co. Bldg., Philadelphia 2, Pa.

No Caulking



JAIL AND PRISON EXPERTS

Backed by 65 Years' Experience

WE CAN ASSIST YOU WITH YOUR PLANS—SPECIFICATIONS—COST DATA

FRIES AND SON
Steel Construction & Engineering Co.
SECOND & MADISON ST., COVINGTON, KY.

Pumping Units For Sale

2 Fairbanks-Morse 6-inch pumping units, 30-hp. motors with all electrical automatic control boxes. Switches all like brand new. 100—20-foot lengths 4-inch tubing. 16-inch electric closing gate valve.

Telephone Hawthorne 7-1000
Shotmeyer Bros. Petroleum Co.
Wagaraw Rd. Hawthorne, N. J.

Superior Engine Division Appoints Credit Manager

Harry A. Olin has been appointed Credit Manager of the Superior Engine Division of The National Supply Co., Pittsburgh, Pa., manufacturers of Superior gas and Diesel engines at their plant at Springfield, Ohio.

HARRIS & EWING

Harry A. Olin

Mr. Olin comes to the company from the Office of Industry Advisory Committee of the Office of Price Administration. Prior to the past two years spent in Washington, Mr. Olin had 23 years in the corporate and municipal banking, investment, and credit fields.

New Advertising Manager for Barber-Greene

John H. Dykstra has been appointed Advertising Manager of the Barber-Greene Co., Aurora, Ill., manufacturers of asphalt equipment and material handling equipment.

Mr. Dykstra, formerly with Mumm-Mullay & Nichols, Inc., Columbus, Ohio, succeeds B. S. Britton, who resigned to go into business for himself doing photographic and publicity work in the construction and allied fields.

"E" Award for Pitometer Log Corporation

Employees and management of the Pitometer Log Corp., 237 Lafayette St., New York, N. Y., have been awarded the Army-Navy "E" for outstanding production of war materials.

Presentation ceremonies took place on February 17 at the Waldorf-Astoria Hotel in New York. Lt. Comdr. John D. Cassidy, USNR, was Master of Ceremonies, Rear Admiral Wat T. Cluverius, USN (Ret.), presented the Army-Navy "E" award, and Lt. Col. M. A. Gallen, Headquarters Second Service Command, gave the Army-Navy "E" pins to representatives of the employees. Edward S. Cole, President of the company, accepted the award on behalf of the organization.

The Pitometer log was first put into one of our Navy ships in 1926. In 1927 the Pitometer Log Corp. was founded to take over all log developments from The Pitometer Co. that manufactures the Pitometer used for water surveys. The advent of the war found the company well prepared for expansion because of the executive experience of Manager John R. Cole, the valuable electrical devices of Francis L. Corbin, Chief Engineer of the company, and the skills of the rest of the technical staff.

ALL OVER THE MAP!

For 25 years Kelly concrete cased wells have stood the test of time. We have several thousand now in service, covering a territory of 33 states and parts of Canada.

Kelly concrete cased wells are especially adapted for developing large water supplies from sand and gravel formations.

We Guarantee our wells to develop all available water, sand free, to their full capacity.

KELLY WELL CO., INC.
Grand Island, Neb.

"Bob White"
ELECTRONIC
BOX LOCATOR

- Will locate curb and street boxes as fast as you can walk.
- Locates de-magnetized boxes where dipping needle fails.
- Finds boxes in the dark without a flashlight.

(Also Pipe Locators and Leak Detectors)

S. F. FERGUSON
11 HILL STREET, NEWARK 2, N. J.

IN USE FROM COAST to COAST

FOR

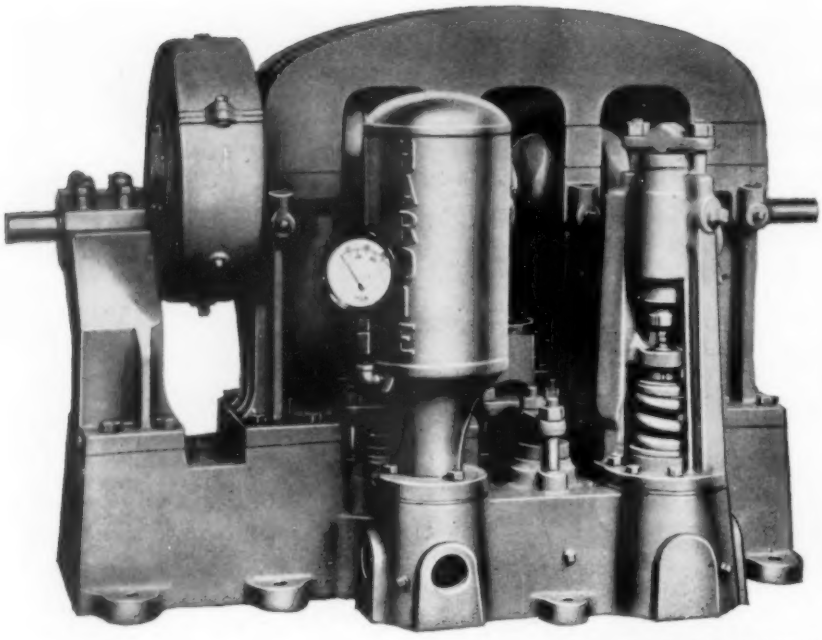
- House-to-Sewer Connections
- Conductor and Irrigation Lines
- Industrial Waste Drainage
- Septic Tank Filter Beds (Perforated)
- Foundation Drains (Perforated)

Millions of feet of ORANGEBURG PIPE are in use in hundreds of communities throughout the country—meeting the need for a permanently satisfactory, economical pipe for non-pressure services.

ORANGEBURG PIPE is constructed of materials which have established records covering 50 years of successful underground service in ORANGEBURG electrical conduit. TAPERWELD joints are permanently watertight and root-proof. The pipe does not corrode or tuberculate.

Write for bulletins giving physical characteristics and chemical properties. THE FIBRE CONDUIT CO., DEPARTMENT A, ORANGEBURG, N. Y.

ORANGEBURG
The Root-Proof Pipe

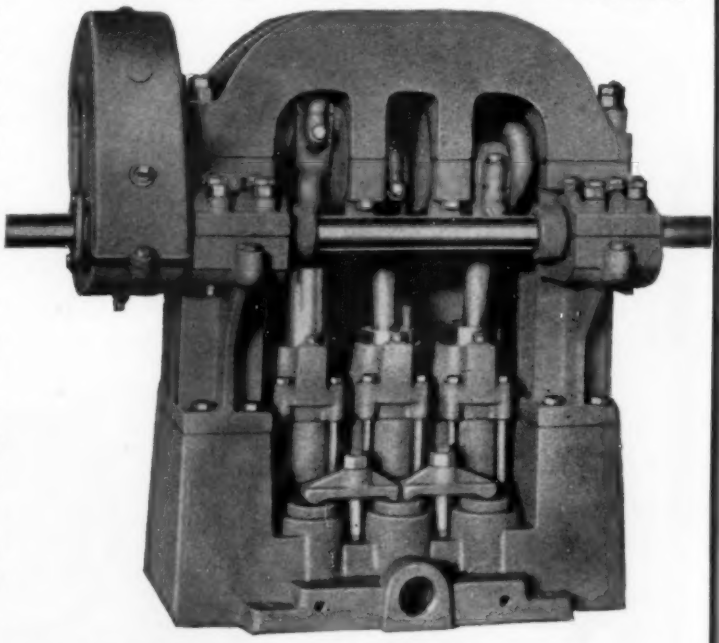


Specify 800 P.S.I.

Above—Hardie Imperial Model LCXA Pump, 60 gallons per minute at 800 P. S. I. at 130 R. P. M. *Below*—Hardie Imperial Model XCXX Pump, 35 gallons per minute at 800 P.S.I. at 118 R.P.M.

● One reason why leading manufacturers of Fog Fire Fighters install Hardie Big Capacity High Pressure Pumps in the complete units they build is because the Hardie pump reaches its full rated capacity and pressure of 800 P.S.I. at slow speed. There is no excessive wear or strain on the pump. It easily delivers the pressure to provide complete atomization.

This means greater dependability, longer life, less trouble and less power requirement. You get 800 P.S.I. without speeding your pump and for long sustained periods without excessive wear on operating parts. Specify a Hardie pump and a Hardie Fog Gun when you buy your new Fog Fire Fighter or convert an old unit into one.



THE HARDIE MFG. COMPANY

Hudson, Mich. Los Angeles, Calif. Portland, Oregon

Canadian Distributor C. W. LEWIS, Grimsby, Ontario

★ H ★ A ★ R ★ D ★ I ★ E

High Pressure PUMPS AND FOG GUNS

for Fog Fire Fighters

Advertising Manager for Koppers Co., Inc.

Ralph Winslow has been appointed Advertising Manager for Koppers Co., Inc., Pittsburgh, Pa., according to a recent announcement by R. H. McClintic, assistant to the president in charge of advertising, sales promotion and public relations.

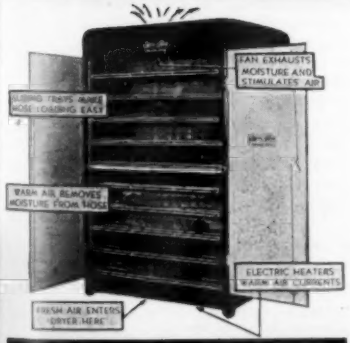
Ralph Winslow

Mr. Winslow comes to Koppers from Libbey - Owens-Ford Glass Co., Toledo, Ohio, where he has been director of advertising and public relations since 1941. Previously he was with Armstrong Cork, Lancaster, Pa., for ten years. He is a member of the Board of Directors and Chairman of the Committee on Vertical Cooperative Advertising of the Association of National Advertisers. For several years he served as a member of the Public Relations Committee of the National Association of Manufacturers, and is a member of the Jury on Marketing Opinion of *Printers' Ink*.

CIRCUL-AIR

FIRE HOSE DRYER

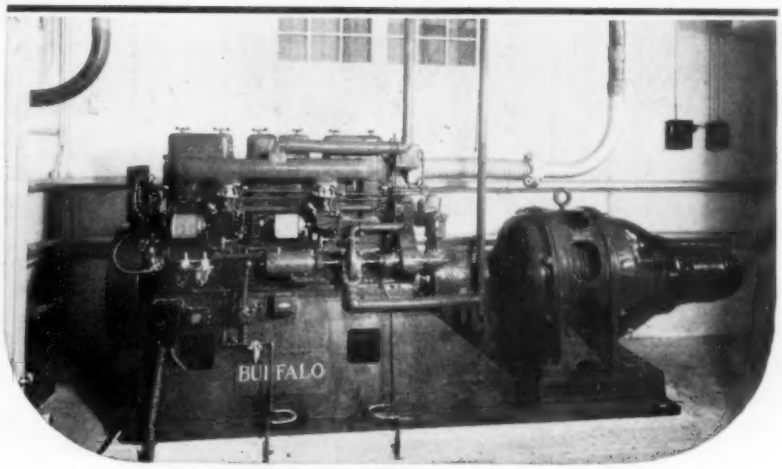
- Is easier to use
- Saves drying time
- Reduces hose stretch
- Prevents mildew and rot
- Improves building design
- Air-conditions as it dries


FAN EXHAUSTS MOISTURE AND STIMULATES AIR
WARM AIR REMOVES MOISTURE FROM HOSE
ELECTRIC HEATERS WARM AIR CURRENTS
FRESH AIR ENTERS DRYER HERE

THE CIRCUL-AIR CORPORATION
6339 East Palmer Avenue
DETROIT 11, MICHIGAN

Quick Starting EVERY TIME

BUFFALO ENGINES
ASSURANCE of PROTECTION



Radio Station WBAL, Baltimore. An RA-6 Engine Generator Unit. Engine 6 cyls., 5⅞" bore, 7" stroke, direct connected to 100 K.W., 1200 RPM Westinghouse generator. Fully automatic stop-start on failure of main source of current.

RADIO stations and fire protection systems both install emergency power equipment, but while, with good fortune, a fire system may never need stand-by power, the nature of radio means that its engines are cut in with some frequency.

It's a pleasure to hear, as we do, from radio station managers that their BUFFALO ENGINES never fail to give them power with the split-second response needed to maintain the stop-watch continuity of radio programming.

Fire, flood control, sewage works and water works have the same assurance of protection when BUFFALO ENGINES are installed. Engineers and others interested are invited to write for BUFFALO ENGINE specifications and data on the design and installation of stand-by equipment.

BUFFALO GASOLENE MOTOR COMPANY

DEPT. AC-55, BUFFALO 13, N. Y., U. S. A.

BUFFALO ENGINES
ASSURANCE of PROTECTION

BUFFALO ENGINES — 100 H. P. THROUGH 750 H. P.— IN GENERATOR AND PUMPING SETS FOR WATER WORKS — AIRPORTS — COMMUNICATIONS — FLOOD CONTROL — HOSPITALS — INSTITUTIONS — MINES — MOVABLE BRIDGES — THEATRES — SEWAGE PLANTS.

RUGGED AS A PIONEER . . .

THE DAVEY PORTABLE COMPRESSOR

Davey pioneered with these "firsts" in portable compressor manufacture: air-cooled design . . . aluminum alloy cylinder heads . . . carbon-free stainless steel valves . . . one-piece welded steel frame . . . automotive type steering. Today, Davey is the only compressor offering all these "firsts" along with guaranteed-for-life valves.

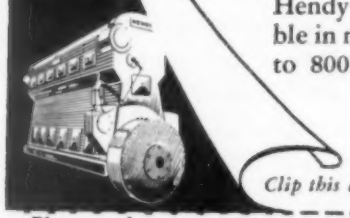
There's a Davey Air Aristocrat compressor for every purpose . . . rugged . . . operating at conservative speeds . . . to insure longer, constant service, at lower ultimate cost.

GET THE COMPLETE STORY by writing for your free copy of Davey Catalog E-172, giving full information on Davey Compressors, Heavy-Duty Truck Power Take-Offs and Pneumatic Saws.

DAVEY *Compressor Co.*
KENT, OHIO
DEALERS IN PRINCIPAL CITIES

HERE IS IMPORTANT NEWS ON DIESELS

The Hendy Diesel embodies features combined for the first time in a single design. The coupon below will bring you complete information on the economical and efficient Hendy Diesel. Available in models from 190 to 800 hp.



Clip this coupon, mail it today!

Please send me your 16-page, 2-color illustrated booklet showing the modern features now available in Hendy Diesels.

Name _____

Company _____ *Position* _____

City _____ *Zone* ____ *State* _____

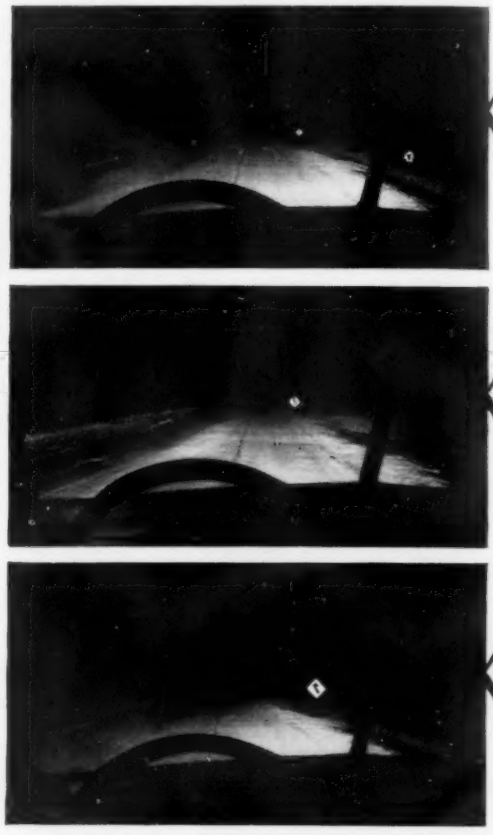
JOSHUA **HENDY** IRON WORKS
ESTABLISHED 1856
SUNNYVALE, CALIFORNIA

THESE PHOTOS SHOW WHY SIGNS REFLECTORIZED WITH

Scotchlite

REFLECTIVE SIGN MATERIAL

Are Now Used Throughout The United States



Signs reflectorized with SCOTCHLITE give greater readability from maximum distances. Brilliance without glare also emphasizes the message for close-up reading. The over-all reflectorization retains the same shape sign and appearance day or night and in addition provides a larger reflectorized area as a warning. The result is a factor-of-safety for the motorist.

Available in roll form, SCOTCHLITE reflective sign material brings the over-all reflectorization of signs down to a price within the highway department's budget.

Lettering can be applied to SCOTCHLITE by screen process, stencil or brush. The ease of lettering plus the four SCOTCHLITE colors of yellow, white, silver and red, make it the most practical and adaptable reflective material for all types of highway signs.

AVAILABLE IN ROLL FORM
MADE AND PATENTED IN U.S.A. BY

3-M

MINNESOTA MINING AND MANUFACTURING CO.
GENERAL OFFICES: SAINT PAUL 6, MINN.
BRANCHES IN PRINCIPAL CITIES

Gar Wood Elects Chairman of Board

Commander John J. Bergen, USNR (Inactive), Chairman of the Executive Committee of Gar Wood Industries, Inc., Detroit, Mich., has also been elected Chairman of the Board of Directors, Glen A. Bassett President announced recently.

KAIDEN-KAZANJIAN PHOTO
John J. Bergen

Commander Bergen in addition is President of the investment banking firm of John J. Bergen & Co., Ltd., New York, and Chairman of the Executive Committee of the United Aircraft Products, Inc., and a Director of Blair & Co.

A member of the Naval Reserve he went on active duty early in 1942 and served as chief staff officer at the Naval Air Center, Espiritu Santos, New Hebrides, and chief staff officer at the Naval Air Bases, Seattle.

Chairman of Board of Hyster Dies

Amedee H. Smith, Chairman of the Board of Directors of the Hyster Co., Portland 8, Ore., died on March 25 at the age of 76.

Mr. Smith was one of the best known business leaders on the West Coast and in addition to his connection with the Hyster Co. was President of the Willamette Iron & Steel Co.; a Director of Portland General Electric Co.; and President of the Oregon Paramount Corp.

A. H. Smith

At various intervals he was President of the Oregon Terminals, Inc.; President, Masonic Temple Association; President, Board of Trustees of Willamette University; Vice-President and Director, Ochoco Timber Co.

Dresser Industries Consolidates Sales Offices

Consolidated domestic and export sales offices for the member companies of Dresser Industries, Inc., Cleveland, Ohio, were opened recently at 800 Chanin Bldg., New York., according to a recent announcement by H. N. Mallon, President.

The offices will also provide New York headquarters for visiting officers of Dresser member companies, and an auditorium seating 250 persons is available for sales conferences and other meetings.

The offices, equipped with every modern time-saving device for improved processing and handling of orders, will provide benefits of combined facilities for offices previously located individually throughout the New York business district. The new offices will also afford closer coordination, and be of advantage to those interested in related products of Dresser Industries, Inc.

Sales departments of the member companies represented in the newly opened offices will be the Dresser Manufacturing Division, Bryant Heater Co., Clark Bros. Co., Inc., Pacific Pumps, Inc., International Derrick & Equipment Co., Roots-Connersville Blower Corp., and Stacey Bros. Gas Construction Co.

Suggestions on how to avoid the confusion and difficulties resulting from a concerted effort to replenish depleted inventories is the subject of a folder issued by Dresser Manufacturing Division to its customers.

In it Dresser suggests the present placement of non-priority memorandum orders to cover 12 months' need following the lifting of stock restrictions, with an indication of the quantity needed quarterly. These will then be studied and deliveries planned, bearing in mind the needs of all customers rather than favoring the first few who have placed orders.

How Dresser believes this plan will work to everyone's advantage is told in this folder.

STREET-NAME SIGNS

Now Available!

Attractive, permanent, rust-proof, metal Street-Name Signs by Cataphote are now available! Outstanding in appearance and legibility. Also—order all types of metal traffic signs with Cataphote Reflector Buttons for day-and-night visibility. Used coast to coast for safer highways.

CATAPHOTE CORPORATION
Toledo, Ohio

over 90 years of
progressive storage tank engineering!

Established in 1854, the R. D. Cole Mfg. Co. has long been recognized as one of the nation's outstanding tank builders. With over 90 years of "progressive storage tank experience" at your disposal, we shall welcome the opportunity to serve your tank needs.

All shapes and sizes

We have developed a complete line of elevated steel tanks for water supply, both for domestic service, and sprinkler requirements, ranging in capacity from 5,000 to 2,000,000 gallons. The designs include the standard Hemi-spherical and Self-supporting bottom, the "Cole Ovaloid," Standpipe, and many individual styles.

Storage Tanks

We also make pressure tanks for storage of gas from digestors at sewage disposal plants so that excess output at peak loads can be used during off-peak periods. Also chemical storage tanks, hot water storage tanks, tanks for bulk storage of oils and gas.

Write for "Tank Talk—No. 15A

R.D.COLE MFG.CO.
Established in 1854
NEWNAN · · · GEORGIA

MEMBERS OF THE NAVY INDUSTRIAL ASSOCIATION

LEFT TO RIGHT: *S. J. Clark, Asst. Mgr., Otis Elevator Co.; D. R. G. Palmer, Pres., General Cable Co.; C. C. Felton, Vice Pres., Revere Cooper and Brass Inc.; Capt. E. Gingrich; Lt. Comdr. E. Casey; Addison F. Vars, Pres., Sterling Engine Co.; M. H. Eisenhart, Pres., Bausch and Lomb Optical Co.; Mark L. Sperry, Vice Pres., Scoville Mfg. Co.*

Industrialists Guests on Navy Cruise

A group of industrialists who were among the organizers of the Navy Industrial Association recently returned from maneuvers aboard the USS Pittsburgh as guests of the Secretary of the Navy, the Commander-in-Chief of the U. S. Fleet, and the Chief of Naval Operations. These six men were invited to participate in the maneuvers in recognition of the association's contribution to the Navy's welfare and the nation's security.

In commenting on the trip, Mr. Addison F. Vars, Vice President of the Association's Executive Committee, and President of Sterling Engine Co., Buffalo, N. Y., paid special tribute to Captain E. Gingrich, his officers and men. "To have been civilian shipmates with such a grand crew of fighting men," he said, "was not only a stimulating and signal honor for every one of us, but one long to be remembered."

The idea of the Navy Industrial Association was implanted in the minds of industrialists when they attended the first two Orientation Courses conducted by the Navy at Columbia University. Membership is now numbered in the hundreds representing the top segments of American industry, all pledged to the closest possible teamwork in war production with and for the Navy. It is a non-profit, non-political organization, scientific and educational in character, with sights raised high for technical developments that will help to insure the strongest peacetime Navy in the world.

New Dealer Appointments for E. D. Etnyre

E. D. Etnyre & Co., Oregon, Ill., recently made several dealer appointments and changes, according to J. W. McCoy, Secretary-Treasurer of the company. A new Washington office has been opened at 1018 Vermont St., NW, under the direction of Charles T. Hvass, Vice President, for the handling of governmental contracts, export business and eastern sales.

Etnyre's New England office, under George E. Pearson, Vice President and Eastern Sales Manager, will have headquarters for the duration in the Boston office of Hedge and Mattheis Co., who handles Etnyre equipment in several offices throughout New England.

In the South, Aldridge Equipment Co., 916 S. State St., Jackson, Miss., recently completed arrangements to handle Etnyre bituminous distributors and street flushers.

The Michigan Tractor and Machinery Co. opened a branch office in Traverse City, Mich., and will act as dealer for Etnyre equipment here as well as in Detroit and Grand Rapids.

In Canada the following arrangements for dealer representatives have been made: Nova Scotia — Coleman Machinery Co., Ltd., Halifax; Ontario—Geo. W. Crothers, Ltd., Leaside, Toronto; Quebec—Laurion Equiment Co., Ltd., Montreal; Saskatchewan—R. J. Fyfe Equipment Co., Ltd., Regina.

The Story of the Diesel

One high-ranking military official said that without the Diesel engine, America could not have successfully fought this war. Ironically the inventor of this engine which has played such a vital role in the war was a German named Diesel.

Devoting all their efforts to filling the needs of war, Diesel manufacturers have expanded production almost 18 times what it was in 1937. A large post-war demand for Diesel engines is building up not only to replace badly worn Diesels now in use, but to fill a great new demand for self-contained power units.

These and many other facts about the industry are pointed out in "The Story of the Diesel," a booklet recently published by the Diesel Engine Manufacturers Association, 1 N. LaSalle St., Chicago 2, Ill.

In non-technical, easy-to-read style it discusses the Diesel's post-war future, its present fields of application, advantages over other types of power, and the beginning and development of the industry.

A chart depicts graphically the industry's enormous growth in horsepower output from 1937 to 1944. In 1937 a production of barely 2,000,000 horsepower was recorded. This leaped to 35,000,000 for last year.

A section describing opportunities for young men in the industry will be of special interest to returning war veterans, many of whom have had first-hand experience with Diesels in the armed forces.

Dual Parking Meter Appoints Representatives

Three appointments to handle sales and distribution of Dual parking meters on the West Coast are announced by The Dual Parking Meter Co., Harter Bank Bldg., Canton 2, Ohio.

PACIFIC UNION MARBELITE CO., Los Angeles, Calif.

TAPER TUBE POLE CO., San Francisco, Calif.

GENERAL ELECTRIC SUPPLY CORP., Seattle, Spokane, Wash., and Portland, Ore.

These companies have long been associated with The Union Metal Manufacturing Co. (parent company of Dual) in the selling of street lighting standards and poles, steel poles for supporting trolley span wires, and for other services.

Although the manufacture and sale of parking meters has been prohibited for several years by government order, it is anticipated that wartime restrictions may soon be lifted, and numerous cities have plans ready for the installation of meters as soon as they are available.

The Dual meter was the first ever produced, and prior to the war Dual installations were made in cities in 30 of the 48 states.

Fruehauf Official Reports Motor Transport Interest

Les Allman, Vice President, Fruehauf Trailer Co., 10928 Harper Ave., Detroit, Mich., reported recently that never has there been such a keen interest in motor transport throughout the country as there is today. During the past four months he has been called upon to address no less than eleven organizations in widely scattered parts of the country.

Mr. Allman states that, "Intense interest is being displayed in the merchandising miracles performed by motor transport even in these difficult times. People are particularly interested in the fact that the motor transport industry sprang right from the people themselves and was not fostered by corporate groups. The industry was developed distinctly and gloriously by individuals who wanted to get into business for themselves."

This Harnischfeger clamshell excavator cleans out the Manque Canal in the heart of Rio de Janeiro.

Clamshell Excavator Keeps Canal Clean

The city of Rio de Janeiro was confronted with the problem of keeping clean the Manque Canal which runs through the heart of the city. They found they were able to make good use of a small clamshell excavator they had purchased at an earlier time.

The machine is a ⅜ cubic yard P&H Model 100 and the sale was made by the Brazilian distributor for the Harnischfeger Corp., Companhia de Anilinas Productos Chimicos e Material Technico. True tractor-type crawlers and low-pressure hydraulic control increase the maneuverability of the unit and simplify its operation.

All construction and mining machinery, overhead cranes, hoists, welding machines and electrodes manufactured by the Harnischfeger Corp., Milwaukee 14, Wis., are identified by the "P&H" trademark and sold through distributors throughout Latin America.

Recent Appointments at the Dorr Co.

Several recent appointments have been announced by The Dorr Co., 570 Lexington Ave., New York 22, N. Y., two of them in connection with the foreign activities of the company.

R. C. Campbell has been named to administer the European, African, and Middle Eastern activities of the company. He will continue as advisor to the Chemical Division in the handling of beet sugar work. Prior to the war he was Assistant Manager of the company's operations in Europe.

A. D. Camp has been assigned to the Foreign Sales Division. In his new capacity he will make fuller use of his knowledge of company activities acquired while manager of the Technical Data Division, and Advertising Manager.

J. D. Grothe has been appointed to head the newly-created Technical Division of the Sales Department. This new division coordinates contract engineering orders and serves in a technical advisory capacity to the company's field staff divisions. Mr. Grothe previously held executive posts with the Dorr Co. in London, Paris, and The Hague and has designed and supervised construction of metallurgical plants in Yugoslavia, Roumania, Cyprus, and Bulgaria. In 1937 he was a member of a mission sent by the Turkish Government to the Taurus Mountains to report on gold, silver, and lead deposits there, and to advise on plant design and operational techniques.

America's Most
WIDELY USED
Photo-copy Equipment
A-PE-CO "Photo-exact"
Photo-Copyer

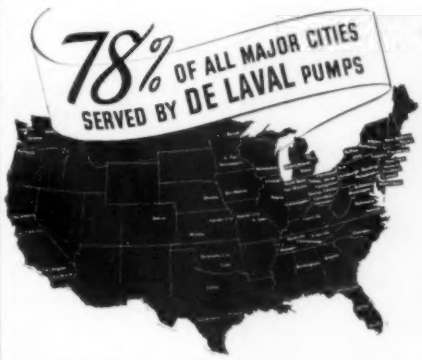
"A Business Necessity" Say Executives

159 tested uses . . . accuracy . . . operating ease . . . saves time . . . speeds work—these are only a few of the many reasons why A-PE-CO is America's most widely used photo-copy system. And A-PE-CO is lowest in price.

Photo-Copies Made Instantly of:
LETTERS TRACINGS FINANCIAL RECORDS
BLUEPRINTS CONFIDENTIAL PAPERS CONTRACTS
. . . anything written, printed, drawn, or photographed, on one or both sides. Easy to read, permanent, legally accepted.

Send for This Useful Folder
In your own office or shop, any inexperienced employee can make A-PE-CO photo-copies. No technical training. No darkroom. Needed now for reconversion, new planning, sales development. A-PE-CO folder tells you how you can use this modern method in your office. Send for it—today.

AMERICAN PHOTOCOPY EQUIPMENT CO.
2849 N. Clark St., Dept. EB-55 Chicago 14, Ill.
Representatives in principal cities and Canada C-



Slightly over forty years ago De Laval introduced high efficiency, horizontally split case centrifugal pumps for water works service. Today, De Laval centrifugal pumps serve seventy-three out of the ninety-three cities in the United States having a population of over 100,000.

The record of De Laval pumps in the water works field is indeed outstanding. 4108

DE LAVAL
STEAM TURBINE COMPANY · TRENTON 2, NEW JERSEY

INSTALLATIONS WORLD WIDE
LARGEST CITY TO SMALLEST VILLAGE

VALVES COMPLETE EQUIPMENT FOR WATER WORKS FILTRATION AND SEWAGE DISPOSAL PLANTS
LATEST "COREY TYPE" HYDRANTS

Write for Catalogue and Information
IOWA VALVE CO.
General Offices:
Hubbell Bldg., Des Moines, Iowa
Plant:
Oskaloosa, Iowa

SMITH
TAPPING MACHINES

★

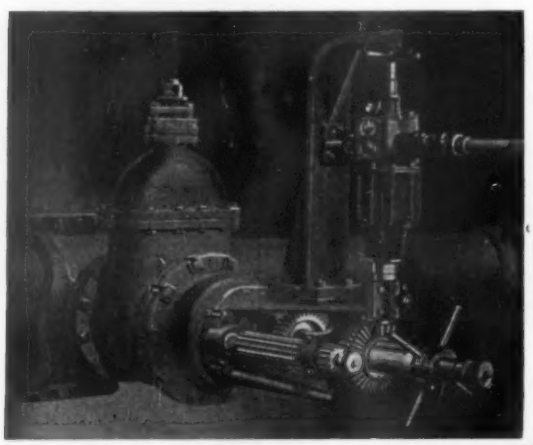
You Can Make a Branch Connection Without Stopping Service

If increased demands for water due to the National war effort make it necessary for you to plan new extensions to your existing pipe lines, you can make the necessary branch connection with a

SMITH TAPPING MACHINE

without interrupting the continuous flow of vital water to other points on the same line. These machines are made to make taps from 2 inches to 42 inches. They are easy to handle and economical to use, and are the most reliable machine for the purpose made.

The larger machines are for rent, and we supply supervision in their use. The smaller ones may be bought or rented.



Above: Smith Tapping Machine for making branch connection to water or gas main under pressure. These machines have been standard equipment throughout the United States since 1889.

★

OTHER SMITH PRODUCTS

Valves and Hydrants
Valve Inserting Machines
Tapping Sleeves
Tapping Valves and Hat Flanges

Write for Catalog

Branches

7 So. Dearborn St., Chicago 3, Ill.
409 Texas St., El Paso, Texas
315 N. Crescent St., Flandreau, S. D.
1221 Mortgage Guarantee Building, Atlanta 3, Ga.
428 13th St., Oakland 12, Calif.
524 First Ave. S., Seattle, Wash.
1317 Oakley Street, Orlando, Fla.
54 Elm St., Melrose, Mass.

THE A. P. SMITH MFG. CO. EAST ORANGE NEW JERSEY

By this sign you will know

INFILCO

Half a Century of Experience **is back of the Water Conditioning and Sewage Treating Equipment Infilco Designs and Builds for You.**

Take advantage of this. Standardize on Infilco Products — everything from Accelators to Zeolites. Place undivided equipment responsibility squarely on the shoulders of Infilco. You'll get better results.

2,000,000 g.p.d. Accelator Softener at Antigo, Wisconsin

There are Accelators for Softening, Clarifying and Stabilizing—and you can't beat them for *PERFORMANCE* and *ECONOMY*. Ask for Bulletin 1824.

INFILCO
INCORPORATED
325 W. 25th PLACE, CHICAGO 16, ILL.

Cast Iron Pipe

PLAIN CAST OR SPUN CENTRIFUGAL

Cast Iron Pipe and Special Castings, Bell and Spigot, Flange, Flexible Joint, Culvert, Milled and Plain End Tubes, Cylinders, Flanged and Bell and Spigot Fittings, High Pressure Fire Service Pipe, Warren Short Body Specials, Threaded End Pipe.

Size 2 to 84-inch

Pipe manufactured in accordance with standard specifications adopted and approved by water works associations and engineers.

Warren Foundry & Pipe Corp.
11 Broadway, New York City

Warren Pipe Co. of Massachusetts
75 Federal Street, Boston, Mass.

New Vice-President for Enterprise Engine

Harold C. Lenfest has been appointed Vice-President in charge of the New York City offices of the Enterprise Engine Co., at 11 Wall Street.

Harold C. Lenfest

Mr. Lenfest comes to Enterprise after long and varied experience in marine and Diesel engineering and has a broad grasp of power development and application.

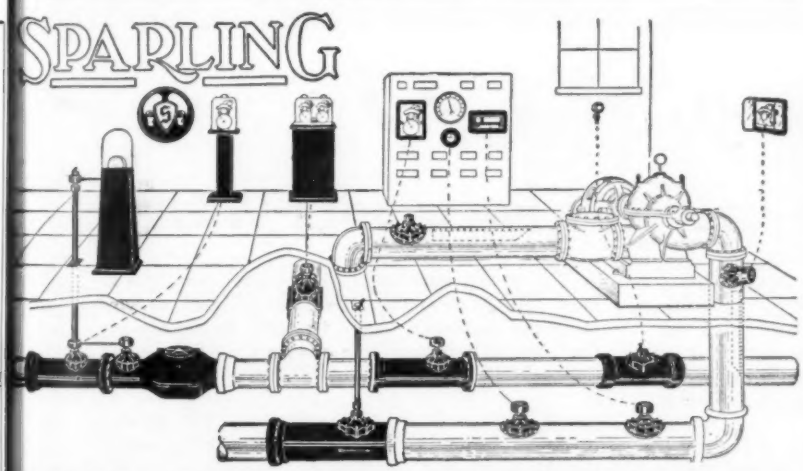
After graduation from Webb Institute of Naval Architecture and Engineering in 1918, he became associated with Bath Iron Works. Since then he has held positions with the following firms: Naval Architect for Fabricated Ship Corp.; Southeastern Manager for DeLaVergne Machine Co.; Eastern District Manager, Diesel Engine Division, American Locomotive Co.; concurrent with this last position he was Consultant for National Defense Research Committee on Mechanical Engineering and Naval Architecture.

C. G. Cox, Vice-President and General Manager of Enterprise, commenting on the appointment of Mr. Lenfest remarked, "Mr. Lenfest brings to Enterprise wide practical experience in Diesel engineering. His appointment has been dictated by the increased needs of Eastern manufacturers, shipbuilders, and other users of Diesels. In addition he will be of great help to those who plan on modernizing power installations with Diesel engines."

Chicago District Manager for Okonite

A. L. McNeill has been appointed Chicago District Manager of The Okonite Co., Passaic, N. J., and will direct the company's insulated wire and cable sales in the middle western territory extending from Ohio to the Rocky Mountains.

Mr. McNeill was previously Manager of the Railroad Department for the same territory and has been with the company since 1925. He has had wide experience in the field, starting his career with the Chicago & Alton Railroad in 1900. From 1908 to 1911 he served as Chief Clerk in the Chicago & Alton Purchasing Department after the consolidation of the Chicago & Alton, the Missouri & St. Louis, the Iowa Central, and the Toledo, St. Louis, and Western Railroads. In 1911 he became Assistant Purchasing Agent for this group, and in 1913 he joined the Central Electric Company, Okonite's agent in Chicago, serving as Manager of Railroad Sales until 1925. At that time he entered the Okonite organization which had just established its own Chicago District office.



MAIN-LINE WATER METERS

The sketch above repays a careful study. It suggests the many types of Sparling Water Measuring Equipment as they might be used — a Compound with auto-metered control of a chlorinator; tube meters for flanged, bell and spigot, and threaded mains; saddle-type meters bolted or welded to lines in place; pedestal, panel and wall-mounted instruments. Further details and prices are given in Bulletin 308, sent upon request.

R. W. SPARLING

Manufacturer of water Measuring Equipment

LOS ANGELES 54....Box 3277, Terminal Annex
CHICAGO 16.....3104 South Michigan Ave.
BOSTON 8.....6 Beacon Street
622 Broadway.....CINCINNATI 2
101 Park Avenue.....NEW YORK 17

ROSS
Automatic
Valves

No distribution system is better than the valves that control it—

ALTITUDE VALVES
for
Control of elevation and heads into and out of tanks, basins and reservoirs.
1. Single acting.
2. Double acting.
3. Combination assembly for three or more automatic operations.

COMBINATION VALVE
Combination automatic control both directions through the valve.
A self-contained unit, with three or more automatic controls.

REMOTE CONTROL VALVE
Electric remote control—solenoid or motor can be furnished.
Adapted for use as primary or secondary control on any of the hydraulically controlled or operated valves.

Write today for catalogs and details to fit your particular system.

ROSS VALVE MFG. CO.
INCORPORATED
P. O. BOX 596, TROY, N. Y.

An Outpost!

AQUA NUCHAR DELIVERS PALATABLE WATER

A Lister Bag hardly looks like an implement of war, but actually it's a very important one. Lister Bags mean safe, palatable water for our fighting men . . . water that is clear and free of objectionable tastes and odors because it has been purified and treated with Aqua Nuchar Activated Carbon.

Aqua Nuchar makes water tasteless and odorless because it removes by adsorption those elements which cause unpalatability.

Aqua Nuchar is as valuable to the home front as it is to the war fronts. For that reason, more than 1200 communities have used Aqua Nuchar to bring palatable water to their taxpayers at the astoundingly low cost of less than two cents per capita per year.

Aqua Nuchar is stocked at convenient points throughout the United States — ready to serve you on a moment's notice.

Check with your water superintendent today. Be prepared for any change that may arise in your raw water supply!

BLUEPRINT NOW!

But above all, remember there is a war yet to be won. Maintain equipment to assure operation at 100% efficiency.

NUCHAR — INSURES PALATABILITY — SAFE DRINKING WATER

INDUSTRIAL CHEMICAL SALES

DIVISION WEST VIRGINIA PULP AND PAPER COMPANY

230 PARK AVENUE, NEW YORK 17, N.Y. | 35 E. WACKER DRIVE, CHICAGO 1, ILLINOIS | 748 PUBLIC LEDGER BLDG., PHILADELPHIA 6, PA. | 844 LEADER BLDG., CLEVELAND 14, OHIO

Robert Slee Joins A. D. Cook, Inc.

Robert W. Slee has been appointed General Sales Manager of A. D. Cook, Inc., Lawrenceburg, Ind., according to an announcement by Joe Downs, Assistant to the President. Mr. Slee will have charge of all pump, strainer, and ejector divisions of the firm.

Robert W. Slee

In addition to managing sales in midwestern states for a prominent pump manufacturer, Mr. Slee formerly headed Wiley-Slee Associates in Chicago, an engineering, sales and general contracting firm specializing in the sanitary field.

Mr. Slee will supervise the sales, service and product development of deep well turbine pumps, well strainers and supplies, and automatic water system units.

Prismo's New President

Armond E. Keeley has been elected President of the Prismo Safety Corp., Huntingdon, Pa.

Mr. Keeley assumed his duties with this organization—producers of safety reflective materials for highway and airport marking—on April 1.

General Detroit Opens Dallas Branch

A new branch and warehouse in Dallas, Texas, has been opened by General Detroit Corp., 2270 E. Jefferson Ave., Detroit 7, Mich., according to F. Dale Bacon General Manager of the Fire Extinguisher Division. S. M. Luce has been appointed Division Manager in charge of the office.

F. Dale Bacon

This new branch will handle distribution in the South and Southwest. Other branches are located in New York, Chicago, Washington, Boston, Los Angeles, San Francisco, and Seattle. Products of the company are also distributed through 22,000 local outlets in all parts of the country.

A *Buyer's Encyclopedia*, illustrating and describing over 500 different items including fire extinguishers, motor fire apparatus, may be obtained by executives by writing the company.

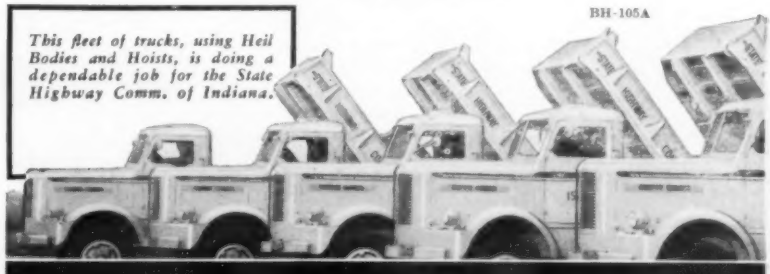
Dependable HEIL bodies and hoists . . .

give you "extra" power . . . more efficiency . . . smoother operation

Heil engineers have spent many years in exhaustive research to give you extra advantages. You get extra power because the oil-gear pump is machined to close tolerance and the hydraulic cylinder is honed to circular perfection. The "test rack" proves it withstands loads greater than rated capacity. You get greater efficiency because the lift arms are perfectly balanced, which aids in creating a low and uniform oil pressure. You get smooth performance because the hoist and body are designed to work together as an integral unit. You get more for your money when you specify "Heil Bodies and Hoists." Contact your Heil distributor. *Write for bulletins.*

BH-105A

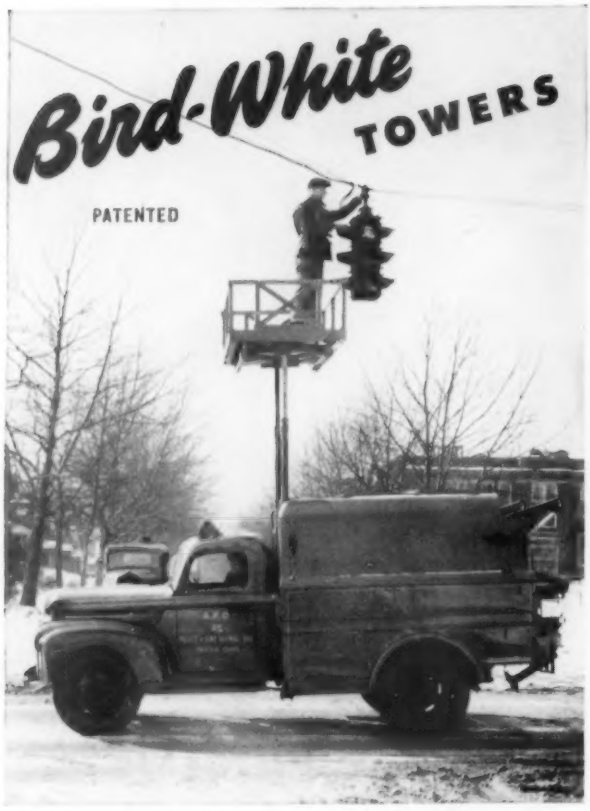
This fleet of trucks, using Heil Bodies and Hoists, is doing a dependable job for the State Highway Comm. of Indiana.



ARMY NAVY

THE HEIL CO.

GENERAL OFFICES • MILWAUKEE 1, WISCONSIN



The Modern Way To Service Municipal Lighting

Simplicity of design, sound engineering and unique construction make the new Bird-White Tower Lifts the last word for all overhead work. They *save time and money* on all signal maintenance, street lighting, tree trimming and heavy line work.

Combining lower initial height, with extreme elevations up to 28 feet, they have all the advantages of heavier, more costly tower lift equipment without the high initial or maintenance cost. Raising and lowering is controlled from lift platform operated by twin hydraulic telescopic rams. Collapsible guard rails provide maximum safety to the operator. A remarkable new jack, offered as optional equipment, eliminates sidesway when tower is raised to extreme elevations.

Bird-White Towers can be adapted to all streamlined or open back utility trucks. Our engineers will welcome an opportunity to design a tower to meet your requirements for either new or old equipment.

Write for Tower Lift Bulletin Today

BIRD-WHITE COMPANY
DEPT. AC, 3119 West Lake Street, Chicago 12, Ill.

ETNYRE
Street Flushers
"THE MACHINE OF A DOZEN USES"

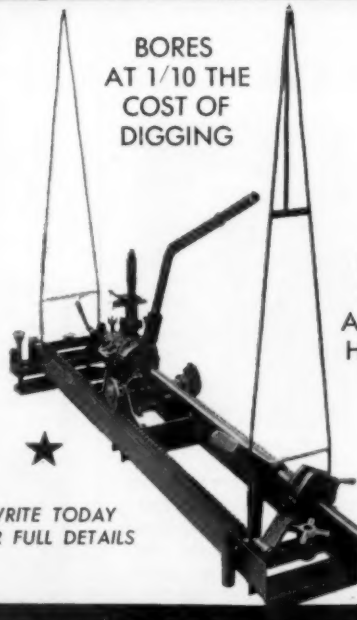
CLEANS STREETS EVEN UNDER PARKED CARS!

"Our Etnyre Flusher cleans streets in ONE TRIP even with cars parked" says Mr. Hargrove, Street Cleaning Department, Leavenworth, Kansas. A light spray washes dust out of central traffic zone — high-pressure, knife-edge streams of water force all waste to gutter. The Leavenworth Etnyre is also used for sewer cleaning, surface sprinkling and tree spraying. To save man hours and keep your city streets clean and healthful, get specifications and prices from your Etnyre dealer or write us.

E. D. ETNYRE & CO., Oregon, Illinois

HYDRAUGER
"THE MECHANICAL GOPHER"

BORES AT 1/10 THE COST OF DIGGING

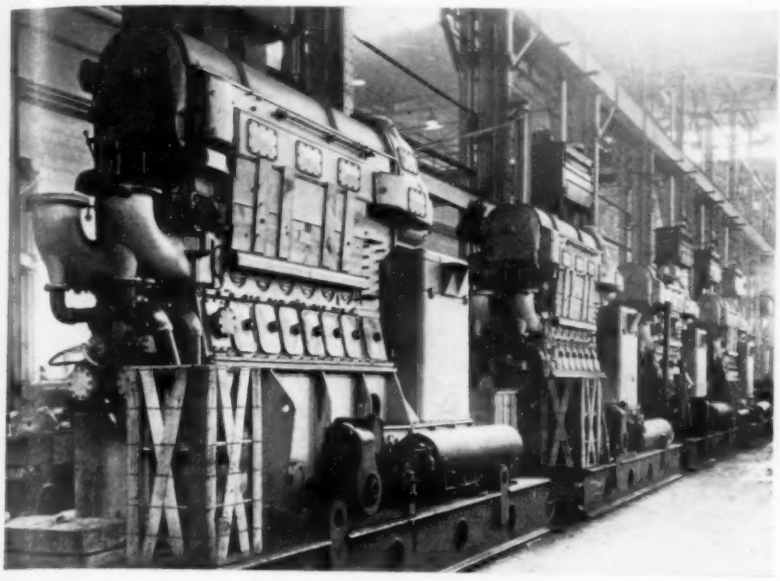


SPELLS ECONOMY, SPEED AND ACCURACY IN HORIZONTAL DRILLING

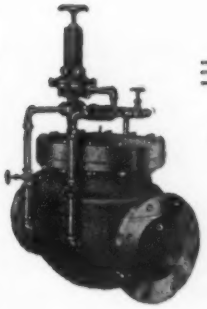
WRITE TODAY FOR FULL DETAILS

HYDRAUGER CORP., LTD.
116 NEW MONTGOMERY STREET
SAN FRANCISCO, CALIFORNIA

Portable Power Plants on Skids



These 12-cylinder Fairbanks-Morse Diesel engines mounted on steel skids are headed for overseas shipment for use by the Army as portable power plants in war-torn areas. The radiators and control panels for each Diesel are mounted separately on similar skids. The picture was taken at the Warren City Mfg. Co., Warren, Ohio, subsidiary of Graham-Paige Motors Corp., Detroit 32, Mich. Similarly mounted Diesel equipment offers post-war potentialities as emergency power equipment in time of flood or other disasters.



WATER PRESSURE RELIEF VALVE

★

Sizes: 3" to 36" Angle and Globe Patterns

On excess pressure, due to line surges or excess pumping head, this valve automatically opens to dissipate necessary water volume to maintain desired line pressure. The valve is arranged either with atmospheric pilot valve exhaust or self-contained, according to service conditions and requirements.

Valves may be arranged to open at abnormal pressures and held open under subnormal pressures until the surge subsides, and then close when normal conditions prevail.

Write for Specifications

GOLDEN-ANDERSON VALVE SPECIALTY CO.

Fulton Building Pittsburgh, Pa.

Highway Planning Division Pioneers Training Course

On March 19 last, the Mississippi State Highway Planning Division inaugurated a two-week training course in aerial mapping and photo interpretation and its utilization as an efficient and practical method for obtaining engineering data for highway planning.

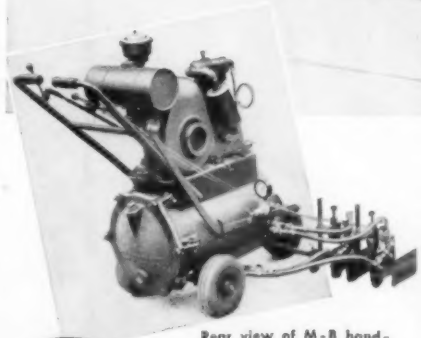
To accomplish good dissemination of this information, states adjoining Mississippi were requested to send representatives. Key personnel of six states—Alabama, Louisiana, Georgia, Arkansas, Missouri and Mississippi—were represented.

The Abrams Aerial Survey Corp., Lansing, Mich., cooperated with the Mississippi Highway Department in conducting the instruction. Three members of their engineering staff—J. E. Meyer, K. A. Smith, and A. F. Warren—conducted lectures and demonstrations on photo interpretation, planning the aerial survey, mosaics, map compilation, profile leveling with the contour finder, stereoscopic ground form lines, and theory of stereoscopy. Equipment for instruction purposes was loaned by the Abrams Instrument Corp.

The material was outlined to present the best and most practical methods of obtaining engineering data from aerial photographs.

Similar schools are being planned by other State Highway Departments throughout the United States, and the Abrams Aerial Survey Corp is cooperating.

M-B Marker putting down single line at street intersection.



Rear view of M-B hand-propelled Marker equipped for double line striping.

It's much easier to control city traffic if streets are properly striped. This handy M-B Marker simplifies the striping job. It handles ALL types of marking; Center-lines, parking areas, cross walks, safety zones, etc. Can also mark athletic fields, airports, tennis courts, playgrounds, etc., and is quickly convertible to an all-purpose paint sprayer. Write for descriptive bulletin.

MEILI-BLUMBERG CORP.
Box A-6 New Holstein, Wis.

MB MARKERS

WARTIME TRAVELERS
RELAX
at Statler Hotels

IF it's *necessary* for you to travel, and if your trips take you to Statler cities, assure yourself of *comfort* and *relaxation* by staying at Statler Hotels.

At Statler Hotels, you get the three wartime necessities for travelers today: Comfortable rooms, delicious food, and restful relaxation.

There are Statlers in:

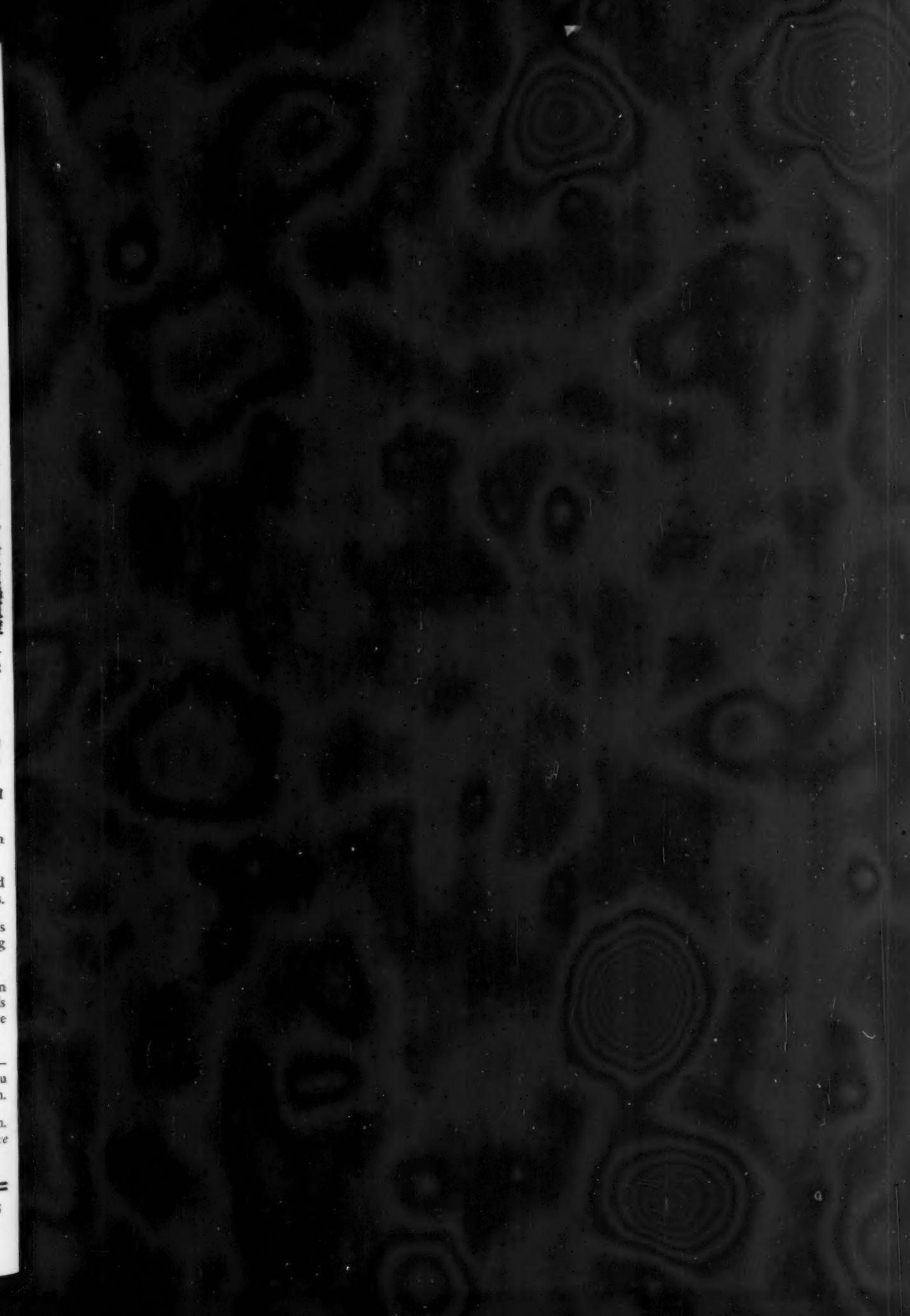
BOSTON • BUFFALO • CLEVELAND
DETROIT • ST. LOUIS

★

NEW YORK Hotel Pennsylvania
PITTSBURGH Hotel William Penn
WASHINGTON, D. C.

LET'S GO - - -
Put the Big Drive Over!

- The Seventh War Loan is an "all out" call to victory.
- No American can falter. No American can afford *not* to answer this vital call.
- Victory comes high. Every day it is delayed costs us dearly in American blood and lives.
- Last year there were two War Bond Drives by this time. The Seventh is *doubly* big because it's two drives in one.
- That's why this is the most urgent war loan of the war. No matter how many bonds you bought in the past, you *must* buy more in this great Seventh.
- If you have *any* income, from *any* source—whether from work, land or capital—you have a personal quota to make in the 7th.
- We must all buy bonds in proportion. Let's meet our quota—*let's exceed it if we can.*



JUNE, 1945

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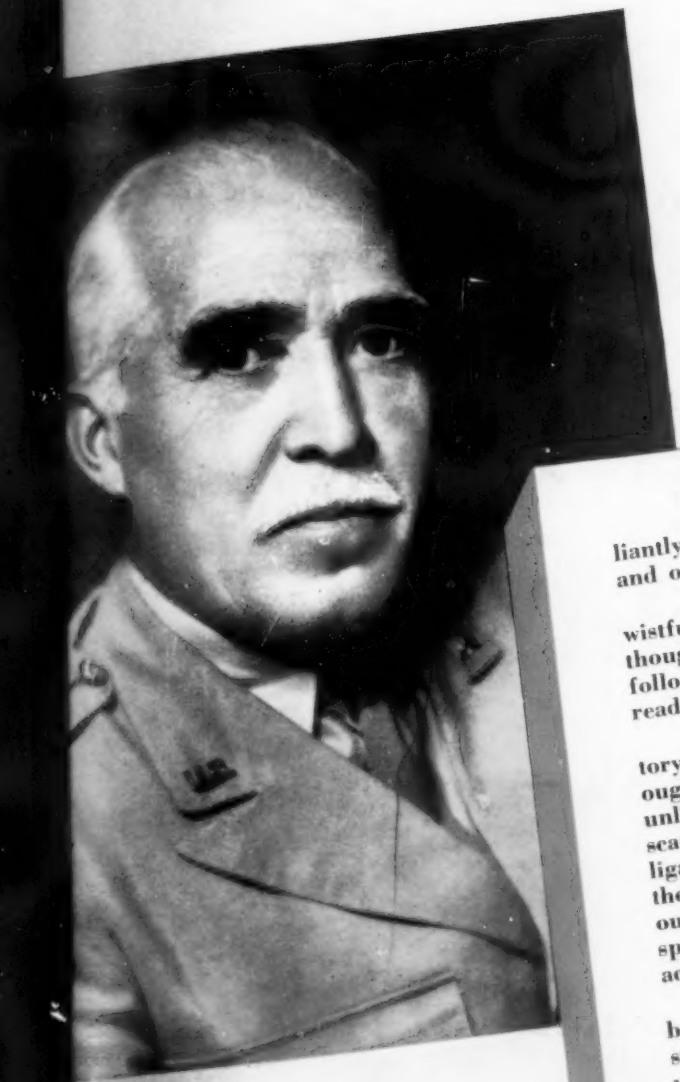
PERIODICAL ROOM
GENERAL LIBRARY

The American City



ONE phase of the war has closed. It was brilliantly fought, boldly executed with skill and daring, and on a scale unprecedented in history.

Victory in Europe came not as the result of any wistful intentions half fulfilled. It was the result of thoughtful, meticulous, exhaustive planning—planning followed by bold action. The plans were complete and ready when time came to put them into effect.

The victory in Europe and the anticipated victory over Japan emphasize the need for no less thorough planning for peace, especially by our cities which, unlike those of Europe, Africa, and Asia, have been unscarred by war. They have a responsibility and an obligation earned with the blood of American youth. When the day comes for which we have long been waiting, our cities also must be ready with detailed plans, with specifications, with preliminary work complete for bold action. Good intentions alone are never good enough.

It may be said again that good intentions have built no bridges, improved no water supplies, constructed no sewerage systems, cleared no slums, provided no useful jobs—and they have paved only one well-known road.

PHILIP B. FLEMING,
Major General, U. S. A.
Administrator, Federal Works Agency

(See pages 7 and 106 of this issue)